

**ENVIRONMENTAL ASSESSMENT
LIVESTOCK GRAZING AUTHORIZATION**

EA Number: CA-650-2004

**Deep Springs, South Oasis,
Eureka Valley, and Last Chance Allotments**

**Bureau of Land Management
Ridgecrest Field Office
March 7, 2006**

Comments, including names and street addresses of respondents, will be available for public review at 300 S. Richmond Rd., Ridgecrest, CA 93555, during regular business hours (7:30 a.m. to 4:00 p.m.), Monday through Friday, except weekends and holidays, and may be published as part of the EA. Individual respondents may request confidentiality. If you wish to withhold your name or street address from public review or from disclosure under the Freedom of Information Act, you must state this prominently at the beginning of your written comment. Such requests will be honored to the extent allowed by law. All submissions from organizations or businesses, and from individuals identifying themselves as representatives or officials of organizations or businesses, will be made available for public inspection in their entirety.

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CHAPTER 1

INTRODUCTION

Four grazing leases for cattle operations in the Ridgecrest Field Office Area expired at the end of the 1999 grazing year (2/28/00). These four grazing leases were renewed under the authority of Public Law 106-113. The duration of the grazing leases renewal varied by allotment based on factors that included rangeland health condition. Grazing leases were for ten year terms, and contained the same terms and conditions as the expiring grazing lease. Public Law 106-113 required compliance with all applicable laws and regulations, which include the National Environmental Policy Act (NEPA), the Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA). Following the analysis of environmental impacts these grazing leases may be canceled, suspended or modified, in whole or in part, to meet the requirements of such applicable laws and regulations.

The Washington Office Instruction Memorandum 2003-071 requires that all grazing permits and leases that expired in 1999 and 2000 be “fully processed” by the end of Fiscal Year 2004 (9/30/04). The term “fully processed” permit/lease refers to the completion of an adequate environmental analysis and issuance of a proposed grazing decision in accordance with 43 CFR 4160; appropriate consultation under the National Historic Preservation Act, the American Indian Religious Freedom Act, and other cultural resources law and regulation; and appropriate consultation in accordance with the ESA.

The Bureau of Land Management (BLM) is proposing to issue four 10 year permits on the Deep Springs, South Oasis, Eureka Valley, and Last Chance allotments to authorize livestock grazing.

The Deep Springs allotment encompasses approximately 39,527 acres BLM land and approximately 5,019 acres non-BLM lands. The allotment is located in Inyo County, California. Elevation range is between 4,920 feet and 6,888 feet.

The South Oasis allotment encompasses approximately 14,599 acres BLM land and approximately 1,210 acres non-BLM lands. The allotment is located in Inyo County, California. Elevation range is between 5,071 feet and 7,703 feet.

The Eureka Valley allotment encompasses approximately 15,975 acres BLM land and 910 acres of non-BLM land. The allotment is located in Inyo County, California. Elevation range is between 3,028 feet and 6,068 feet.

The Last Chance allotment encompasses approximately 34,406 acres BLM lands and approximately 713 acres non-BLM lands. The allotment is located in Inyo and Mono Counties, California. Elevation range is between 5,084 feet and 7,478 feet.

Five major plant communities have been identified in the allotments using Robert F. Holland's classification system (1986): Great Basin Mixed Scrub Community; Creosote Bush Scrub; Desert Greasewood Scrub; Saltbush Scrub; and Joshua Tree Woodland.

B. NEED FOR THE PROPOSED ACTION

The proposed action is needed to authorize grazing in accordance with 43 CFR 4100 and consistent with the provisions of the *Taylor Grazing Act*, *Public Rangelands Improvement Act*, and *Federal Land Policy and Management Act*. Action may be required to maintain or improve resource conditions including rangeland health. The leases are valid for 10 year terms, ending on 2/28/2010, subject to the terms and conditions therein. The terms and conditions of the leases may be modified according to the findings of this environmental assessment.

C. PLAN CONFORMANCE

RELATIONSHIP TO STATUTES, & REGULATION

The proposed action is subject to the California Desert Conservation Area Plan (CDCA Plan) 1980 as Amended (August 1999) and as amended by the Northern and Eastern Plan Amendment (NEMO), 2002. The proposed action has been determined to be in conformance with these plans as required by regulation (43 CFR §1610.5-3(a)). The proposed action would occur in areas identified for livestock grazing as indicated in the Livestock Grazing Element in the CDCA Plan 1980 (1999), pages 56 to 68. The proposed action is consistent with the land use decisions, and goals and objectives listed in the CDCA Plan.

The South Oasis allotment does meet the Secretary of Interior Approved Rangeland Health Standards as follows. As the table below indicates cattle are not a reason for not fully meeting Rangeland Health Standards. The Rangeland Health Assessment for Last Chance allotment is pending. No Rangeland Health Assessments were completed for Deep Springs, and Eureka Valley allotments.

Rangeland Health Standard	Meets Standard	Does Not Meet Standard	Impacts from Livestock Yes or No	Remarks
South Oasis--- Soil Permeability	Met			
Riparian/Wetland	Met			
Stream Morphology	Met			
Native Species		Not Met	No	Not met because of Tamarisk--- Cattle grazing is not a reason for occurrence.

Assessment determination completed September 7, 1999 for South Oasis allotment.

Endangered Species

These allotments provide habitat for State listed fish, wildlife, and plant species. According to the MOU between BLM and CDFG we agree: "to notify the Department of all projects involving impacts to, or manipulation of, State-listed rare (threatened) and endangered fish, wildlife and plants and to obtain State recommendations of the project-specific management of such populations."

Cultural Resources

California BLM has explicit responsibility to manage cultural resources on public lands under the National Historic Preservation Act (NHPA; P.L. 89-665); Federal Land Policy and Management Act (FLPMA; P.L. 94-579); Archaeological Resources Protection Act (ARPA; P.L. 96-95); Native American Graves Protection and Repatriation Act (NAGPRA; P.L. 101-601); American Indian Religious Freedom Act (AIRFA; P.L. 95-431); and other law and implementing regulation. General compliance with these requirements is outlined in the Programmatic Agreement Among the Bureau of Land Management, the Advisory Council on Historic Preservation, and the National Conference of State Historic Preservation Officers Regarding the Manner in which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act (National PA) and the Protocol Agreement between California BLM and the California State Historic Preservation Officer Regarding the Manner in which BLM Will Meet Its Responsibilities Under the National Historic Preservation Act (Protocol Agreement).

All grazing permits that cover cattle grazing will be subject to compliance with Section 106 of the National Historic Preservation Act following procedures defined in an amendment to the Protocol Agreement (Livestock Grazing Amendment or Amendment). Background site record and literature review will be conducted. Inventory will focus on the intersection between areas that are known or suspected to contain significant cultural resources and areas in which cattle congregate and therefore have the greatest potential to affect cultural resources. An inventory design following the terms of the Protocol Range Amendment will be written for each allotment. Inventory will be carried out following that design. Results of inventory and actions taken to avoid adverse effects to cultural resources will be reported annually to the BLM California State Office and the State of California Office of Historic Preservation. Compliance with Section 106 requirements must be completed within 10 years. Federally recognized and State recognized Native American tribal groups and individuals are being consulted on issues of concern to them, such as the presence of sacred, traditional use, or other culturally important areas or features. The results of this analysis will be used to modify grazing permits. Stipulations on each grazing permit will be modified to reflect compliance with the Livestock Grazing Amendment. All cultural resources will be subject to review and evaluation to identify effects resulting from grazing and related activities. All cultural resources will be afforded protection or mitigation consistent with law, policy, and the Protocol Livestock Grazing Amendment.

Special Status Plant Species:

It is BLM's policy to carry out management, consistent with the principals of multiple use, for the conservation of Special Status Plant Species and their habitats and will ensure that actions authorized, funded, or carried out do not contribute to the need to federally list any of the species as threatened or endangered.

Wilderness

The Piper Mountain and Sylvania Mountain Wilderness areas are found in the Deep Springs, South Oasis, Eureka Valley, and Last Chance Allotments. Grazing activities currently occur in these wilderness areas. For the purpose of this analysis, the proposed action contains no impacts that are expected to occur above those impacts already occurring under current grazing management.

The proposed action is consistent with the California Desert Protection Act of 1994: “CDPA (P. L. 104-433, Section 103.(c)): “Livestock.—Within the wilderness areas designated under Section 102, the grazing of livestock, where established prior to the date of enactment of this Act, shall be permitted to continue subject to such reasonable regulations, policies, and practices as the Secretary deems necessary, as long as such regulations, policies, and practices fully conform with and implement the intent of Congress regarding grazing in such areas as such intent is expressed in the Wilderness Act and section 101(f) of Public Law 101-628.”

In general, the wilderness act prohibits roads, motorized equipment, mechanical transport, landing of aircraft, and placement of new structures and installations. The wilderness areas are managed primarily to preserve natural features. For allotments containing wilderness areas, allotments are required to be managed under the provisions of the 1964 Wilderness Act and enabling legislation for the wilderness area.

Congress provided additional guidance for managing livestock within wilderness areas through the Congressional grazing guidelines found in the 1980 Colorado wilderness legislation. Regulations to manage livestock in wilderness is found in 43 CFR 6300. For allotments within Wilderness Study Areas, they shall be managed consistent with the direction found in the Interim Policy Management Handbook 8550.

Water Quality

The federal Clean Water Act (CWA) delegates to the states the authority to regulate certain activities that may affect water quality. The California State Porter-Cologne Act (CA Water Code ' 13140-13143) establishes the State Water Quality Control Board and nine Regional Water Quality Control Boards (RWQCB). It directed the preparation of Basin Plans and provided guidance on factors to include in the plans. It also implemented the Federal Clean Water Act. The project is within the Lahontan Region and under the jurisdiction of the Lahontan RWQCB. The RWQCB has prepared a Basin Plan which includes beneficial uses and water quality standards.

Air Quality

The Great Basin Unified Air Pollution Control District (GBUAPCD) has state air quality jurisdiction over the area including the Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments. The air district has rules which apply to most emissions including fugitive dust emissions.

Regulations

Management of habitat for the tortoise and over 100 other sensitive species on public lands is being addressed. For livestock grazing purposes, this proposal is subject to BLM regulations at 43 CFR 4100 (grazing regulations).

Plans

Northern and Eastern Mojave Plan (2002) (Habitat Conservation Plan/CDCA Plan amendment): BLM, U.S. Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), county and city governments, various interest groups, the U.S. military, and a number of public lands stakeholders participated in developing this plan. It is an amendment to the CDCA Plan. The Northern & Eastern Mojave Plan is a local bio-regional planning effort addressing State and federally-listed species.

CHAPTER 2

PROPOSED ACTION AND ALTERNATIVES

A. CURRENT MANAGEMENT

The current management consists of authorizing cattle grazing on the Deep Springs, South Oasis, Eureka, and Last Chance allotments, under four grazing permits, each for a term of 10 years. In addition, the current season of use and permitted use, including management actions and stipulations stated below would also be included in these grazing permits.

1. Livestock Numbers and Season of Use

Allotment	Number	Kind	Class	From	To	AUMs
Deep Springs	250	Cattle	Cow/calf	3/1	5/31	756
	167	Cattle	Cow/calf	12/1	2/28	494
South Oasis	69	Cattle	Cow/calf	4/1	10/31	476
Eureka Valley	N/A	Cattle	Cow/calf	4/1 Ephemeral Only	10/31	Variable, depending on forage
Last Chance	136	Cattle	Cow/calf	3/1	2/28	1632

2. Livestock Management

A map of these allotments is contained in Appendix 1.

The Deep Springs Allotment is a perennial cattle grazing allotment of 44,546 acres comprised of 5,019 acres non-BLM land and 39,527 acres of BLM land. Piper Mountain Wilderness has 7,707 acres within the allotment boundaries. Grazing occurs during two seasons of the year, winter and spring. During the winter season (December-February) the rancher has 494 AUMs and during the spring season (March-May) he has 756 AUMs for a total of 1250 AUMs annually. The allotment is divided into 5 pastures and the rancher rotates his cattle through the pastures allowing nine months of rest minimum between uses. During the last 13 years Deep Springs Allotment has been grazed at or below the maximum number of AUMs in nine years and been allocated 50-200 extra AUMs when ephemeral forage is available in four years. The rancher has taken “non-use” twice.

Historically there is moderate (40-60% use) cattle activity around the windmill in the center of the valley but this is privately owned. The rest of the cattle activity on the allotment is light (< 40% use). However, a polygon stretching from the southern boundary of the college’s base property, south along the eastern edge of valley to about a mile north of Deep Springs Lake, then west to the foothills where the highway goes up the canyon into the White Mountains, and back north along the western edge of valley receives the bulk of the use (20-40%). (See Map)

Forage plants on the allotment consist of *Krascheninnikovia lanata* (Winterfat), *Eriogonum sp.* (Buckwheat), *Atriplex confertifolia* (Shadscale), *Atriplex canescens* (Fourwing), *Achnatherum hymenoides* (Indian Rice Grass), and *Achnatherum speciosa* (California Needlegrass). Water is provided through springs and wells.

The South Oasis Allotment is a perennial cattle grazing allotment of 15,809 acres comprised of 1,210 acres of non-BLM land and 14,599 acres of BLM land. The current allocation is 477 AUMs and grazing management is a deferred rotation strategy, specifically described in section VI of the South Oasis and Eureka Valley Allotment Management Plan. Within this allotment, 65 AUMs for wild horses and 223 AUMs for Burros, have been set aside for their management. Piper Mountain and Sylvania Mountain wilderness areas have a total of 9,826 acres within the allotment boundaries. Traditionally, the season of use has been from spring through early fall (April-October) with 476 AUMs assigned. In the last 13 years this allotment has been entirely rested twice, and never grazed more than the permitted number of AUMs.

Historically, the mountainous area of the allotment has received only slight or no use. This is the area southwest of Eureka Valley Road. In some years the area around One Tubb Spring has received light use (< 40% use). This is an area of low or dispersed cattle activity. The area to the northeast of Eureka Valley Road is out on the flats and has polygons of moderate use (40-60% use) around watering sources that occur midway down Eureka Valley Road and in the far northeast corner of the allotment. These are areas of moderate and high (>60% use) cattle activity.

Forage plants consist of *Atriplex canescens* (Fourwing), *Graya spinosa* (Hopsage), *Acamptopappus sphaerocephalus* (Goldenhead), *Krascheninnikovia lanata* (Winterfat), *Mendora spinescens*, *Ephedra nevadensis* (Mormon Tea), *Achnatherum speciosa* (California Needlegrass), *Hilaria sp.*, *Sitanion hystrix* (Bottlebrush or Squirreltail), and *Achnatherum hymenoides* (Indian Rice grass). Water is provided by wells.

The Eureka Valley Allotment is an ephemeral cattle grazing allotment of 16,885 acres comprised of 910 acres of non-BLM land and 15,975 acres of BLM land. There are 16,085 acres of the Piper Mountain Wilderness within the allotment boundaries. As an ephemeral allotment it is only designated for use when ephemeral forage is available. Ephemeral allocations are determined on a yearly basis. Allocations would follow the guidelines in the CDCA Plan as amended and repeated in the allotment management plan (AMP) for the allotment. The procedure includes the use of an interdisciplinary team and clipping to determine if there is adequate forage production for wildlife, wild horses and burros and the livestock. The CDCA Plan requires achieving 200 Lbs./ acre of ephemeral production prior to turn out and the maintenance of that minimum production throughout the grazing season. Monitoring proposed in the AMP includes the ephemeral clipping and utilization studies (on perennial species). Though low in altitude, it is a remote allotment, not easily accessed, and has no water improvements. Eureka Valley Allotment has been grazed twice in the last 13 years. Traditionally it is used in conjunction with one use area in the South Oasis Allotment and there is no fence separating the two allotments. If the rancher on South Oasis Allotment defers his spring use until June, there is a likelihood that Eureka Valley will see only sporadic use unless a decided effort is made to push cattle into the allotment during years of good ephemeral forage. Topographically the Piper Mountains border the allotment to the north and most of the allotment consists of gently sloping alluvial pavement at the northern end of Eureka Valley. Death Valley National Park borders the allotment on the south side.

The Last Chance Allotment is a perennial cattle grazing allotment of 35,119 acres comprised of 713 acres of non-BLM land and 34,406 acres of BLM land. There 29,001 acres of the Piper Mountain and Sylvania Mountains wilderness areas within the allotment boundary. The season of use is year around (March-February) and there are 1632 AUMs attached to the lease. Traditionally this allotment was grazed in conjunction with the Magruder Mountain Allotment administered through the BLM from Tonopah, Nevada. However, the Magruder Mountain Allotment was closed for administrative reasons and as a consequence there has been no grazing on the Last Chance Allotment since 1996. In 1996, 364 AUMs were used and in the five preceding years use ranged from 1174 to 1201 AUMs. Grazing on the entire Last Chance Allotment is contingent upon the Magruder Mountain Allotment and Death Valley National Park being open to grazing because most the water for the two allotments is on the Magruder Mountain Allotment (Nevada side) or within the NPS. The most useful water on the Last Chance Allotment is from a shared pipeline with South Oasis Allotment and Oasis Ranch Allotment on the far northwestern edge of the allotment.

Historically the entire allotment is lightly used (<40%). However, there has been moderate cattle activity through Cucomongo Canyon where Willow Spring is located as cattle come across from the Magruder Mountain Allotment on the Nevada side. Heavier cattle activity occurs in the wash going up into Sylvania Canyon and on the flats to the northwest where there are water improvements shared with South Oasis Allotment, however, even this is recorded as light use (<40%) for the most part.

The forage plants on the allotment are *Graya spinosa* (Hopsage), *Ephedra nevadensis* (Mormon Tea), *Lepidium Fremontii* (Desert Alyssum), *Mendora spinescens*, *Artemisia spinescens* (Budsage), *Achnatherum hymenoides* (Indian ricegrass), and *Sitanion hystrix* (Bottlebrush or Squirreltail). The topography consists of gently sloping flats in the north at the south end of Fish Lake Valley that lead up to the rugged, dry Sylvania Mountains. The Sylvania Mountains occupy about two-thirds of the allotment. Death Valley National Park borders the allotment to the south.

Management actions common to all four allotments:

- i All grazing is subjected to upper threshold limits to the level of use on key forage species (see Appendix 2, Proper Use Factors). When monitoring indicate the level of use on listed key forage species has been reached, the livestock must be removed for that area, pasture or allotment. The livestock must be moved to a point in which grazing will not continue in those areas reaching utilization limits.
- ii All range Improvements will be maintained in functioning condition, all major repairs and modifications must be approved by BLM prior to initiating the work.
- iii Grazing Actual Use forms will be submitted within two weeks from the end of that grazing season.

C. Range Improvements

The range improvements for Deep Springs, South Oasis, Eureka Valley and Last Chance allotments are listed in Appendix 3. There are no range improvements on the Eureka Valley Allotment.

D. Measures to Maintain or Achieve Standards (Terms and Conditions of Permit)

None

E. Monitoring

The rangeland monitoring of the four allotments is currently in three categories. These categories are 1) short term monitoring, 2) long term monitoring, and 3) interpreting the indicators of rangeland health through an allotment assessment.

The use of short term monitoring is a tool to gauge the cause and effect of the current authorization. This type of monitoring consists of actual use, current climatic conditions and the collection of utilization data. This type of data would be collected on a yearly basis at minimum. The collection of utilization data should be triggered by the growing season of key species and correlate with the phenology of key species. Utilization studies are collected from within two weeks from the end of the grazing period to prior to the on-set of new spring growth the following year.

The collection of long term monitoring data typically occurs every ten years. The collection of trend data, both photo and measured trend is used to determine long term cause and effect of long term grazing strategies. The collection of measured trend has typically been accomplished through the collection of frequency data at key areas.

The collection of indicators of rangeland health information is a qualitative method that requires the formation of an interdisciplinary team that makes observations of various indicators to determine the health of rangelands and the achievement of fallback or regional standards of rangeland health. This process is also considered a long term, and typically occurs every ten years.

B. PROPOSED ACTION

This alternative was developed after a review of resource issues and conditions found on Deep Springs, South Oasis, Eureka Valley and Last Chance allotments. Monitoring requirements, mitigation measures, and permit terms and conditions developed in the resolution of issues will be incorporated into this alternative to minimize potential impacts to resources while continuing to provide forage for livestock grazing. The Proposed Action includes all the actions under the Current Management as well as the following:

1. Grazing within the Last Chance allotment is confined to the Northwestern portion of the Last Chance Allotment. See Allotment Map Appendix 1. Season of use will remain yearlong, however all grazing will be done in a single, annual period of no longer than 90 days. There must be a period of rest (no grazing) during the critical growth period (March through May) in between each grazing period. Permitted use will be set at 379 AUMs. Any future adjustments in permitted use will be done in accordance with 43CFR 4110.3.

2. Regional Standards and Guidelines

With the approval of the Northern and Eastern Mojave Desert Plan Amendment in December 2002 the following Regional Standards and Guidelines are incorporated into the grazing lease and management practices.

Standards:

Soil

Soils exhibit infiltration and permeability rates that are appropriate to soil type, climate geology, landform, and past uses. Adequate infiltration and permeability of soils allow accumulation of soil moisture necessary for optimal plant growth and vigor , and provide a stable watershed as indicated by:

- Canopy and ground cover are appropriate for the site
- There is diversity of plant species with a variety of root depths
- Litter and soil organic matter are present at suitable sites
- Maintain the presence of micro biotic soil crusts that are in place
- Evidence of wind or water erosion does not exceed natural rates for the site
- Hydrologic and nutrient functions maintained by permeability of soil and water infiltration are appropriate for precipitation

Native Species

Healthy, productive and diverse habitats for native species, including special status species (Federal T&E, federal proposed, federal candidates, BLM sensitive, or California State T&E, and CDD UPAs) are maintained in places of natural occurrences as indicated by:

- Photosynthetic and ecological processes continue at levels suitable for the site, season, and precipitation regimes
- Plant vigor, nutrient cycle, and energy flow are maintaining desirable plants and ensuring reproduction and recruitment
- Plant communities are producing litter within acceptable limits
- Age class distribution of plants and animals are sufficient to overcome mortality fluctuations
- Distribution and cover of plant species and their habitats allow for reproduction and recovery from localized catastrophic events
- Alien and noxious plants and wildlife do not exceed acceptable levels
- Appropriate natural disturbances are evident
- Populations and their habitats are sufficiently distributed to prevent the need for listing special status species

Riparian/Wetland and Stream Function

Wetland systems associated with subsurface, running, and standing water, function properly and have the ability to recover from major disturbances. Hydrologic conditions are maintained as indicated by:

- Vegetative cover will adequately protect banks, and dissipate energy during peak water flows
- Dominant vegetation is an appropriate mixture of vigorous riparian species
- Recruitment of preferred species is adequate to sustain the plant community
- Stable soils store and release water slowly
- Plants species present indicate soil moisture characteristics are being maintained
- There is minimal cover of invader/shallow-rooted species, and they are not displacing deep-rooted native species
- Maintain shading of stream courses and water sources for riparian dependent species
- Stream is in balance with water and sediment being supplied by the watershed
- Stream channel size and meander is appropriate for soils, geology, and landscape
- Adequate organic matter(litter and standing dead plant material) is present to protect the site and to replenish soil nutrients through decomposition

Water Quality

Water quality will meet state and federal standards including exemptions allowable by law as indicated by:

- Dissolved oxygen levels, aquatic organisms and plants (e.g., macro invertebrates, fish and algae) indicate support of beneficial uses
- Chemical constituents, water temperature, nutrient loads, fecal coliform and turbidity are appropriate for the site or source
- Best Management Practices will be implemented

Air Quality

Air quality will meet State and Federal standards including exemptions allowable by.

- Best Management Practices will be implemented

Guidelines for Grazing Management

Resource conditions of each allotment will be routinely assessed to determine if Public Land Health Standards are being met. In those areas not meeting a Standard, monitoring processes will be established if they do not presently exist to monitor indicators of health until the Standard or resource objective has been attained. Activity plans for other uses or resources that overlap an allotment could have prescribed resource objective that may further constrain grazing activities, e.g., ACEC Plans. In an area where a Standard has not been met, the results of monitoring the modification or implementation of grazing management actions will be reviewed annually. During the final phase of the assessment process, the Determination will schedule the next assessment of resource conditions. A livestock trailing network, grazed plants, livestock facilities, and animal waste are expected impacts in all grazing allotments and will be considered during analysis of the assessment/monitoring process. To attain Standards and resource objectives, the best available science will be used to determine appropriate grazing management actions. Cooperative funding and assistance from other agencies, individuals, and groups will be sought to collect prescribed monitoring data for indicators of each Standard.

- Facilities are to be located away from riparian-wetland areas wherever they conflict with achieving or maintaining riparian-wetland functions.
- The development of springs and seeps or other projects affecting water and associated resources will be designed to protect the ecological functions and processes of those sites.
- Grazing activities at an existing range improvement that conflict with achieving proper functioning conditions (PFC) and resource objectives for wetland systems (lentic, lotic, springs, adits, and seeps) will be modified so PFC and resource objectives can be met, and incompatible projects will be modified to bring them into compliance. The BLM will consult, cooperate, and coordinate with affected interests and livestock producer(s) prior to authorizing modification of existing projects and initiation of new projects. New range improvement facilities are to be located away from wetland systems if they conflict with achieving or maintaining PFC and resource objectives.
- Supplements will be located well away from wetland systems.
- Management practices will maintain or promote perennial stream channel morphology (e.g., gradient, width/depth ratio, channel roughness, and sinuosity) and functions that are appropriate to climate and landform.
- Grazing management practices are to meet State and Feral water quality standards. Where impoundments (stock ponds) and troughs that have a sustained discharge yield of less than 200 gallons per day to surface or groundwater are exempted from meeting State drinking water standards per SWRCB Resolution Number 88-63.
- In the California Desert Conservation Area all wildfires in grazing allotments will be suppressed. However, to restore degraded habitats infested with invasive weeds (e.g., tamarisk) prescribed burning may be utilized as a tool for restoration on a case-by-case basis. Prescribed burns may be used as a management tool for chaparral plant communities in the South Coast Region, where fire is a natural part of the regime.
- When climatic conditions and space allow, seedling establishment of native species will be promoted.
- Grazing on designated ephemeral (annual and perennial) rangeland is allowed to occur only if reliable estimates of production have been made, an identified level of annual growth or residue to remain on site at the end of the grazing season has been established, and adverse effects on perennial species are avoided.
- During prolonged drought, range stocking will be reduced to scientifically based carrying capacity, based on climatic conditions. Livestock utilization of key perennial species on year-long allotments will be checked about March 1 when the Palmer Severity Drought Index/Standardized Precipitation Index indicates dry conditions are expected to continue.
- Through the assessment process or monitoring efforts, the extent of invasive and/or exotic plants and animals will be recorded and evaluated for future control measures. Methods and prescription will be implemented, and an evaluation will be completed to ascertain future control measures.
- Restore, maintain or enhance habitats to assist in the recovery of federally listed threatened and endangered species. Restore, maintain or enhance habitats of special status species including Federal proposed, Federal candidates, BLM sensitive, or California State T&E to promote their conservation.
- Grazing activities will support biological diversity across the landscape, and native species and micro biotic crusts are to be maintained.
- Experimental and research efforts will be encouraged to provide answers to grazing management and related resource concerns through cooperative and collaborative efforts with outside agencies, groups, and entities.

C. NO GRAZING ALTERNATIVE

This alternative would not renew the lease on all four of the allotments. As a result, grazing would not continue in these areas. This would be a permanent change. The BLM would initiate a process in accordance with the 4100 regulations to permanently eliminate grazing on the allotments.

CHAPTER 3 ENVIRONMENTAL ANALYSIS

A. AIR QUALITY

a. Affected Environment

Air quality throughout the allotment area is generally good. There are, however, times that portions of the area have not meet state air quality standards for PM₁₀ due to locally generated and/or transported in pollutants.

b. Environmental Consequences:

1. Impacts of the Current Management and Proposed Action:

Direct and Indirect Impacts:

Fugitive dust could occur due to the soil disturbance as a result of the trampling action of the cattle when soil moisture levels are low. Support vehicle use on the access roads will generate small amounts of PM₁₀ emissions throughout the grazing area and could carry soils onto the paved roads which would increase entrainment emissions. PM₁₀ emissions as a result of the existing grazing activities are estimated to be well below the 100 ton significant level in the allotments. Ruminant animals emit methane gas which is a precursor emission for ozone. Ozone precursor emissions are expected to be minimal. No significant offsite impacts are anticipated. None of the allotments are located within a federal nonattainment area, as a result no conformity analysis or determination is necessary.

Irreversible and irretrievable commitment of resources

No irreversible or irretrievable commitment of air resources would result.

Residual Impacts

Residual impacts to air quality include continued dust emissions from vehicle activity and grazing operations and hydrocarbon and combustion emissions from ruminant animals and internal combustion engines during the grazing operations. No long term residual adverse effects on air resources are expected from the Proposed Action. The impacts are expected to occur during the duration of the existing grazing. Once the action is completed, the site should return to pre grazing emission levels.

Cumulative Impacts

The cumulative effect area for air resources for the Proposed Action is the Great Basin Valleys Air Basin. The expected emission levels are within the cumulative NAAQS 24 hour and one year PM_{2.5} and PM₁₀ emission standards and the one and eight hour ozone emission standards and are not likely to result in or contribute to exceedences of the National Ambient Air Quality Standards.

Recommended mitigation measures

None

2. Impact of No Grazing:

Direct and Indirect Impacts:

No impacts to air would occur as a result of grazing activities.

c. References

Listed at the end of the document

B. AREA OF CRITICAL ENVIRONMENTAL CONCERN (ACEC)

a. Affected Environment

White Mountain City ACEC

The White Mountain City ACEC, located along Wyman Creek in Deep Springs Valley, was created under the California Desert Conservation Area Plan in 1980 (USDI, BLM 1980), to protect both historic and prehistoric resources (USDI, BLM 1987). It encompasses approximately 830 acres of public land. Historic materials include remains of historic mining structures and features. Prehistoric materials include petroglyphs and other prehistoric site types. None of the resources have been formally evaluated for eligibility for listing in the National Register of Historic Places. Formal evaluation would be likely to find all or most of the resources to be eligible if they retain integrity. Regulation requires that unevaluated sites be managed in such a way that values that may make them eligible for listing are not affected. Ethnographic sources identify the mouth of Wyman Canyon as having been the location of a major Paiute seasonal habitation site (Ibid 1987), so unidentified archaeological sites and areas of particular interest to Native Americans may exist within or adjacent to the ACEC. Inventory within the ACEC for preparation of the ACEC management plan covered only a narrow corridor along Wyman Creek. No additional inventory has been carried out, but would be likely to identify other cultural resources. At the time the management plan was written vehicle access and camping were identified as sources of impact to resources in the ACEC, resulting in damage to the resources and accumulation of trash. Current data on use, trends, impacts, and conflicts are unavailable because no monitoring has taken place since the ACEC management plan was signed.

b. Environmental Consequences

1. Impacts of Current Management and Proposed Action

Impacts to cultural resources within the ACEC resulting from grazing are unknown. An area of moderate grazing use within the ACEC was identified based upon use data collected in the 1980s. The level of use is tied to the fact that water is available in Wyman Creek. Inspection of other creeks in the area that contain water for all or most of the year has shown that areas along the creek banks are heavily impacted by cattle, resulting in high levels of soil compaction and vegetation removal. These activities would have significant impacts upon archaeological materials and features on the ground. Organic materials deposited by the cattle change the appearance of the soil and make identification of some archaeological manifestations more difficult to discern. "Midden" soils, which are soils that have turned dark and ashy by the deposit of human refuse over long periods of time and are important in identifying locations of prehistoric habitation, may be masked by the additional organic material deposited by grazing cattle. These materials may also render some types of scientific analysis difficult or useless because they affect prehistoric organic materials that might be collected for analysis. Cattle may also break artifacts lying on the surface of the ground or displace them both horizontally and vertically, both of which affect the ability to derive information for archaeological materials. Consultation with Native Americans will include discussion of whether or not these actions would be considered by them to affect traditional, sacred, or other values. Groups or individuals other than Native Americans who may have cultural concerns for the area have not been identified.

2. Impacts of No Grazing

This alternative would discontinue direct impacts that are currently occurring. Current data on what those impacts are, if any, are unavailable. Some kinds of impacts, such as damage from eroding soils, may continue after grazing has been discontinued unless remediative action is taken. This alternative would also eliminate an activity that may be considered a historic use in the area and may have adverse effects on the traditional values of those engaged in the activity.

3. Cumulative Impacts

The cumulative impacts of grazing over the past hundred years or so and into the foreseeable future could result in severe degradation or complete destruction of some resources in areas in which the intensity of use is high, such as the area along Wyman Creek where cattle congregate, or in other such areas. Under the Proposed Route Designation in the Northern and Eastern Mojave Desert (USDI, BLM 2004) the loop route along Wyman Creek, which parallels the main route and was closed in the 1987 ACEC management plan, has been identified as open. This will likely have the effect of encouraging the same kinds of impacts that were occurring and for which the route was closed. Vehicle use on this route was documented at the time as causing significant impacts to cultural resources.

c. Consultation

Consultation with the State Historic Preservation Officer will be required as outlined in the grazing appendix to the state Protocol Agreement and will largely take the form of annual reports on progress and measures taken to avoid, eliminate, or mitigate impacts to cultural resources. Individuals or groups other than Native Americans who may have traditional or cultural concerns about the area will be contacted as they are identified or as they identify themselves to BLM.

d. References

References listed at the end of the document

C. BIOLOGICAL SOIL CRUSTS:

a. Affected Environment

Biological soil crusts are likely to occur over most of the Allotments. Soil crusts were found at 2 of the 3 upland sites sampled during the rangeland health assessments. Soils with these crusts are often referred to as cryptogamic soils. The open space between higher plants is not generally bare of all life. Highly specialized organisms make up a surface community consisting of cyanobacteria, green algae, lichens, mosses, microfungi and other bacteria. The cyanobacteria and microfungal filaments weave through the top few millimeters of soil holding loose soil particles together forming a biological crust which stabilizes and protects soil surfaces. The biological crusts aid moisture retention, fix nitrogen, and may discourage the growth of annual weeds. Below the surface, the soil flora grow various rhizines, hyphae and filaments that further bind the soil together. Most of the biological crust organisms make their growth during cool moist conditions.

b. Environmental Consequences

1. Impacts of the Current Management and Proposed Action:

Direct and Indirect Impacts:

It is thought that the low to mid-elevation arid ecosystems in the west developed with low levels of surface disturbance. As a result the crusts in these areas are easily disturbed by trampling by grazing animals which apply compressional and shear forces. The crust response to these disturbances is highly variable. Moisture and burial are two important factors relating to the degree of impact. Moist crusts are better able to withstand disturbances than dry soils. Many of the biological crust species are not mobile and cannot survive burial. This results in the loss of most mosses, lichens, green algae and small cyanobacteria. The large, filamentous cyanobacteria can move 5mm per day if it is wet and can survive if it is wet. The general result of burial is a greatly simplified crustal community due to the loss of species. Grazing in the late winter and spring can reduce both species diversity and cover of biological crusts because the soils are dry. These allotments have been grazed for over one hundred years and it is likely that continued grazing would not make any appreciable additional changes in the biological crust species diversity.

Irreversible and Irretrievable commitment of Resources:

Biological soil crusts can recover from disturbance over time. The time factor is dependent upon the degree of displacement and soil moisture. In moist conditions partial recovery of the mobile species can occur in days. More complete recovery of all species on a site can be from five to seventy years.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

The long term result of continued impacts is a greatly simplified crustal community due to the loss of species.

Recommended Mitigation:

None

2. Impacts of No Grazing:

Direct and Indirect Impacts:

A slow recovery of the less mobile crust species would occur.

Irreversible and Irretrievable commitment of Resources:

Biological soil crusts can recover from disturbance over time. The time factor is dependent upon the degree of displacement and soil moisture. In moist conditions partial recovery of the mobile species can occur in days. More complete recovery of all species on a site can be from five to seventy years.

Residual:

Same as direct impacts

Cumulative Impacts:

The long term result of removing grazing impacts is a more complex crustal community due to species recovery.

Recommended Mitigation:

None

c. References

Listed at the end of the document.

D. CULTURAL RESOURCES

a. Affected Environment

Identification efforts within the four grazing allotments have been restricted almost entirely to inventory to identify prehistoric and historic archaeological resources, and little such information is available for the four allotments covered under this EA. Inventory consists of a few 1 mile by 1/8 mile transects done during preparation of the California Desert Conservation Area Plan; several small inventories for range improvements, Caltrans work areas, and other actions; a corridor along both sides of Highway 168 through Deep Springs Valley for fence construction (BLM Ridgecrest Cultural Resources files and CHRIS data base) and inventory carried out for a Ph.D. dissertation in Deep Springs Valley (Delacorte 1990). Delacorte inventoried 151 500 by 500 meter study units

scattered randomly throughout Deep Springs Valley and the surrounding watersheds. The total inventory area amounts to less than 2% of the area contained within the four allotments. Delacorte recorded rock art, hunting blinds and other features that comprise an extensive hunting complex around Deep Springs Lake; and rock rings which occur primarily in Pinyon-Juniper or Upper Sagebrush vegetation communities but also occur in the Lake Shore, Desert Scrub, and Alpine Tundra vegetation communities. He also recorded a number of standing or collapsed wooden structures, storage pits, rock cairns, hearths, and milling features. Historic archaeological sites are known in the White Mountain City ACEC and several historic structures have been noted on maps in the Ridgecrest Field Office files, but no specific data are available. There are also recorded archaeological sites in Cucomunga Canyon and a few in Fish Lake Valley. None of these resources have been formally evaluated for eligibility for listing in the National Register of Historic Places. The complex around Deep Springs Valley and other resources recorded by Delacorte represent significant prehistoric occupation and have yielded information important in prehistory through private research (Delacorte 1990). Having yielded information important in prehistory is one of the criteria that render archaeological materials eligible for listing in the National Register of Historic Places so these sites should be considered as eligible for listing even though formal paper work has not been done. Very little data is available on the other 3 allotments. There are no recent monitoring data so current conditions and effects are unknown. This information will be generated as inventory is carried out under the Protocol grazing appendix.

b. Environmental Consequences

1. Impacts of Proposed Action (Same as Current Management)

The following discussion is taken from Environmental Assessment Livestock Grazing Authorization, EA Number CA 170-03-54, BLM Bishop Field Office, December 2003.

Livestock use impacts on cultural resources include: displacement (vertical and horizontal) and breakage of artifacts, and the mixing of depositional associations through trampling; destruction or enhanced deterioration of structures and features through rubbing; and an acceleration of natural erosional processes. Plants valued by Native American traditionalists could be trampled or consumed by livestock, adversely affecting plant availability at some locations. For purposes of analysis it is assumed that the impacts of livestock use are distributed in proportion to the actual distribution of livestock, with the most intensive impacts occurring at livestock use concentration areas. Cultural resources located on lands having erosional or other types of watershed deterioration problems attributed to livestock use impacts are assumed to receive high impacts. Cultural resources are non-renewable, and impacts of livestock use on cultural resources are cumulative (USDI, BLM 1982).

Relatively few studies have been undertaken to address the impacts of domestic livestock grazing to archaeological resources (Archaeological Sites Protection and Preservation Notebook: Technical Notes (ASPPN) I-15; Osborn et al. 1987; Roney 1997; Thomas D. Burke personal communication [to Kirk Halford, ed. note] 1998), with more emphasis being placed on the effects of human trampling in site formation processes (see Nielson 1991). Nonetheless, the same conclusions have been drawn from these studies as summed by Nielson (1991).

Intensive trampling modifies the horizontal distribution of artifacts, it obscures patterns existing in their original deposition, and eventually introduces new trends in their spatial

arrangement. By producing vertical migration of materials it also can move artifacts across stratigraphic units, and mix in the same deposit items originating in different occupations. When trodden, artifacts undergo several types of damage, like breakage, micro-chipping and abrasion. The resulting traces sometimes mimic the damage produced by use or by other post-depositional processes and therefore can lead unwittingly to erroneous functional interpretations (Nielson 1991:483-484).

Variables influencing the level of impact at any given site include: 1) soil type (e.g., hard or rocky soil substrates will lead to greater artifact damage and horizontal displacement); 2) soil moisture (e.g., wet soils will lead to greater vertical displacement and stratigraphic mixing); 3) vegetation type/ground cover (depending on site landform specifics, erosion may increase as vegetation cover decreases resulting in significant secondary impacts); and 4) intensity of grazing.

The studies reviewed here are experimental tests of trampling impacts (Archaeological Sites Protection and Preservation Notebook: Technical Notes (ASPPN) I-15, 1990; Nielson 1991; Osborn et al. 1987; Roney 1977). All of the studies found that smaller artifacts (< 2 g [ASPPN 1991]) tend to migrate vertically more readily than larger artifacts thus biasing site interpretation in cases where no subsurface analyses are involved. In a controlled experiment within a portable corral, Roney (1977) found that after 40 hours, in which 78 cows were rotated through the corral, that only 5% of 60 flaked stone artifacts could be found on the surface. The hard soil substrate was churned to a fine dust to 5 cm (depth, approximately 2 inches, ed. note), 81% of the artifacts were horizontally displaced up to .75 m (meters [approximately 2 feet], ed. note) and 48% were damaged and broken. Roney (1977) concluded that "...cattle do produce significant physical damage to lithic artifacts."

Nielson (1991), in his assessment of human trampling, found the same trends with top soil loosening occurring in 1-2 cm (depth, approximately 1 inch or less) on a hard soil substrate with subsoils being compacted. Again smaller items tended to migrate downward, but were less apt to move horizontally than large specimens. Sixty percent of the lithic debitage (stone flakes from tool manufacture, ed. note) showed damage ranging from abrasion, microflaking, and breakage. As would be expected, ceramics showed the greatest level of impact with a random distribution of sizes being reduced to a skewed, unimodal distribution dominated by smaller size classes less than 30 cm (12 inches, ed. note) in diameter. We can predict that cattle impacts would be highly magnified over Nielson's (1991) results from his studies on human trampling, but would follow the same trends.

In field visits Tom Burke (personal communication 1998), owner and principal investigator of Archaeological Research Services, Inc., has found cattle grazing to have "substantial adverse effect to archaeological site integrity." In heavy use areas mixing can occur up to 10-20 cm (centimeters; 4 to 8 inches, ed. note) in most conditions and up to 30-40 cm (12 to 16 inches, ed. note) in wet conditions. The author's investigations corroborate Burke's assessments. As would be expected, Burke has found impacts to be highest in areas where cattle tend to congregate such as springs, water courses, troughs, shade zones, and salt licks. The zone of impact around such features extends from 25-100 meters (approximately 75-300 feet, ed. note), with a linear pattern of roughly 25 to 50 meters (approximately 75 to 150 feet, ed. note) following stream courses. Field assessments in the Bishop Field Area support these observations.

In summary, it can be concluded that livestock grazing can have adverse effects to archaeological resources causing artifact damage, movement, and mixing. In the case of standing structures, cattle rubbing or scratching can cause severe impacts causing structure

degradation and collapse (Chuck Fell, Bodie State Historical Park, personal communication 1995). Intensity of grazing, soil hardness, moisture, vegetation cover, and type are factors influencing the level and types of impacts. Erosion is a secondary impact resulting from grazing that can also have negative effects to cultural sites. The areas of greatest concern are those locations where livestock congregate and tend to spend a large percentage of the time. In zones where livestock are more dispersed, such as upland locations, it can be predicted that impacts will be mainly surficial, causing no stratigraphic mixing, but perhaps resulting in horizontal displacement of artifacts. In rocky areas and zones without sufficient feed very little to no cattle impact is expected to occur (field observation 1999). (The above discussion taken from USDI, BLM 2003.)

Impacts other than physical damage or movement may occur. Organic material deposited by cattle, especially in concentration, may affect certain kinds of analysis, such as blood residue analysis performed on artifacts to determine species of animals hunted by prehistoric populations. In summary, impacts are very likely occurring to archaeological resources located in areas in which cattle concentrate. Within the 4 allotments, a number of such have been identified in Deep Springs Valley, Wyman Creek, Eureka Valley, the Sylvania Mountains, and Cucomonga Canyon. Other areas that are probably getting cattle use intensive enough to cause impacts include Antelope Spring, a riparian area in the Chocolate Mountains, and an area in Sylvania Canyon. Other areas may be identified as inventory is carried out.

Recommended Mitigation

All range improvements that have not been previously inventoried for cultural resources or that are modified, repaired, moved, upgraded, etc. will be inventoried for cultural resources prior to work on the improvement.

Any new improvements will be inventoried for cultural resources prior to construction. The proposed locations of such will be moved to avoid effects to cultural resources as needed.

The following mitigation from the Livestock Grazing Amendment should be incorporated into the grazing permit if this alternative is selected to be used as inventory identifies affects to cultural resources:

Standard Protective Measures will be carried out as inventory identifies affects to cultural resources. If these measures can be effectively applied, no evaluation or further consultation with SHPO will be required. In situations in which these measures will not address effects, consultation with SHPO will be initiated.

Standard Protective Measures can include but are not limited to:

A. Fencing or enclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:

1. the area within the enclosure must be inventoried to locate and record all cultural resources; and
2. the enclosure (i.e.) fence must not divide a cultural resource so that a portion is outside of the fence; and
3. the cultural resource specialist will determine the appropriate buffer to be provided between the cultural resource and its enclosing fence.

- B. Relocation of livestock management facilities/improvements at a distance from cultural resources sufficient to ensure their protection from concentrated grazing use.
- C. Removal of natural attractants of livestock to a cultural resource when such removal, in the judgment of the cultural resource specialist, will create no disturbance to the cultural resource (e.g. removing vegetation that is providing shade).
- D. Removal of the area(s) containing cultural resources from the allotment.
- E. Livestock herding away from cultural resource sites.
- F. Use of salting and/or dust bags or dippers placement as a tool to move concentrations of cattle away from cultural sites.
- G. Other protective measures established in consultation with and accepted by SHPO.
- H. Conduct yearly monitoring to ensure that treatment measures are effective.

2. Impacts of No Grazing

Selection of this alternative would eliminate further direct impacts to cultural resources. Damage that has already occurred may continue to degrade resources through the action of soil erosion and other such effects. This alternative would discontinue direct impacts that are currently occurring. Current data on what those impacts are, if any, are unavailable. Some kinds of impacts, such as damage from eroding soils, may continue after grazing has been discontinued unless remediative action is taken. This alternative would also eliminate an activity that may be considered a historic use in the area and may have adverse effects on the traditional values of those engaged in the activity

3. Cumulative Impacts

The cumulative impacts of grazing over the past hundred years or so and into the foreseeable future could result in severe degradation or complete destruction of some resources in areas in which the intensity of use is high. Cumulative impacts may occur from other actions, such as vehicle use on routes also used to access grazing allotments or developments, camping in riparian areas that are also frequented by cattle, and recreational use of areas also used by cattle.

c. Consultation

Consultation with the State Historic Preservation Officer will be required as outlined in the grazing amendment to the state Protocol Agreement and will largely take the form of annual reports on progress and measures taken to avoid, eliminate, or mitigate impacts to cultural resources. Individuals or groups other than Native Americans who may have traditional or cultural concerns about the area will be contacted as they are identified or as they identify themselves to BLM.

d. References

References listed at the end of the document

E. ENVIRONMENTAL JUSTICE

a. Affected Environment

The grazing allotments being analyzed are located in rural Inyo County. The rural areas of this county are typically occupied by moderate to low-income households. The lessees that hold the

grazing leases for the allotments being analyzed typically have moderate incomes. Seasonal laborers that may be hired by the lessees generally come from low-income households.

b. Environmental Consequences

1. Impacts of Proposed Action (Same as Current Management)

The implementation of the proposed action would have an affect but not a disproportionate affect on low-income or minority populations living on or near the allotment being analyzed.

The grazing of livestock in rural Inyo County has been a common practice for over 100 years. Typically, ranching has been performed by persons of low to moderate income, and may or may not be considered a minority. There are no Native American communities on or near any of the allotments being analyzed

2. Impacts of No Grazing

Under the no grazing alternative there would be an affect but not a disproportionate affect with respect to low-income or minority populations. The loss of livestock grazing in rural Inyo county could result in the loss of seasonal employment to a very small component of low-income or minority populations.

3. Cumulative Impacts

There are no known cumulative impacts to low-income or minority populations as a result of current grazing practices (proposed action). The no grazing alternative may have some cumulative present and future impacts to a very small component of low-income or minority populations

c. Consultation

All affected Native American tribes with traditional ties to the lands within the allotments being analyzed would be consulted.

F. FARMLANDS, PRIME OR UNIQUE

a. Affected Environment

The proposed action and the alternatives would have no affect on unique or prime farmlands because there are no lands so designated in the allotment.

G. FLOOD PLAINS

a. Affected Environment

The proposed action and alternatives would have no affect on flood plains because there are no flood plains in the allotment.

H. INVASIVE, NON-NATIVE SPECIES

a. Affected Environment

The definition of “weed” is always debatable. Traditional definitions include “plants out of place” or “plants that by their presence conflict with management objectives for the site.” The BLM definition also incorporates the concept of public land health and sustainability and reads: “A weed is defined as a non-native plant that disrupts or has the potential to disrupt or alter the natural ecosystem function, composition and diversity of the site it occupies. Its presence deteriorates the health of the site, makes efficient use of natural resources difficult, and it may interfere with management objectives for that site. It is an invasive species that requires a concerted effort (manpower and resources) to remove from its current location, if it can be removed at all.” “Noxious” weeds refer to those plants which have been legally designated as unwanted or undesirable. This includes national, state, and county or local designations. According to the Federal Noxious Weed Act of 1974 (7 U.S.C. 2802(c)) native plant species are not designated “noxious”. In addition to the state and national noxious plants lists, BLM has issued a “BLM National List of Invasive Weed Species of Concern”. In a 1995 Memorandum of Understanding between the BLM and other federal agencies and the State of California, Priority would be placed on eradication, control or containment of “A” rated weed species and localized infestations of “B” and “C” rated weeds according to California Administrative Code 4500. According to the State of California Department of Food and Agriculture, “A” rated Noxious weeds are to be eradicated, contained or refused entry, “B” rated Noxious weeds are more widespread, and therefore more difficult to contain and eradication is left up to local county Agricultural Commissioners and “C” rated Noxious weeds may be so wide spread that the state does not endorse eradication or containment.

Inventory work conducted over the last several years have detected more than twenty species of noxious/invasive weeds on or adjacent to public lands within the Ridgecrest Field Office. Five of those species occur on or adjacent to The Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments (table 1). Some of these species are quite widespread in the area. Cheat grass is found through out the allotments. Halogeton has been found north of the South Oasis Allotment and southwest of the Eureka Valley Allotment. Salt cedar has been identified for control in the area. Salt cedar is found at four sites in the Deep Springs Allotment and two sites in the South Oasis Allotment.

Bossard et al (2000) note that the “presence of salt cedar is associated with dramatic changes in geomorphology, groundwater availability, soil chemistry, fire frequency, plant community composition and native wildlife diversity.” The non-native annual grasses such as cheat grass and red brome are thought to deteriorate wildlife habitat values by out-competing the more desirable native forbs for nutrients and space. Non-native invader species such as red brome and cheat grass are wide spread in the allotments and have been related to overgrazing. The current relation of these species to grazing is unknown as they are as prevalent in isolated areas which have never been grazed as they are in grazed areas. Grazing related weedy invader species have not become a problem in the allotment.

Invasive/Noxious Weeds Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments Table 1			
Common Name	Scientific Name	CDFA Rating	CalEPPC Rating
downy brome(cheat grass)	<i>Bromus tectorum</i>		A-1
halogeton	<i>Halogeton glomeratus</i>	A	Red Alert
salt cedar	<i>Tamarix ramosissima</i> (&others)	C	A-1
red brome grass	<i>Bromus (rubens) madritensis</i> <i>Ssp. rubens</i>		A-2
Russian thistle	<i>Salsola tragus</i>	C	

b. Environmental Consequences

1. Impacts of Current Management and Proposed action

Direct and Indirect Impacts:

It is unknown what role the cattle would have in maintenance, spread or introductions of new noxious weeds. The cattle could be shipped from areas which may have noxious weed populations. It may be possible for the cattle to carry seeds with them. It is be possible that the cattle spread existing noxious weed populations by mechanically moving seeds and modifying high intensity use sites to provide a more favorable environment for the weeds.

Irreversible and Irretrievable commitment of Resources:

The introduction of exotic species, especially noxious weeds is very difficult if not impossible to reverse. Some of the noxious weeds have the potential to totally dominate a site.

Residual:

Same as Direct and Indirect Impacts.

Cumulative Impacts:

Weed encroachment is a regional and national problem. Weeds found in the Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments are part of the larger problem.

Recommended Mitigation:

Continue to inventory for weed populations and use an integrated approach for management.

2. Impacts of No Grazing:

Direct and Indirect Impacts:

Grazing would cease to be a factor in weed management, but the weeds would continue to be a problem in the area.

Irreversible and Irretrievable commitment of Resources:

The introduction of exotic species, especially noxious weeds is very difficult if not impossible to reverse. Some of the noxious weeds have the potential to totally dominate a site.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

Same as Proposed Action.

Recommended Mitigation:

Same as Proposed Action

c. References

Listed at the end of the document.

I. NATIVE AMERICAN CONCERNS

a. Affected Environment

The area contained within the four allotments was occupied at historic contact by Paiute and Shoshone groups. These groups usually consisted of families or extended families who moved on a seasonal basis through relatively large areas to take advantage of differing environmental zones for procurement of a variety of resources (cf. Bettinger 1978, 1989; Busby *et al* 1979; Delacorte, 1990; Fowler *et al* 1995; Grosscup 1977; Kroeber 1925; Liljeblad and Fowler 1986; Norwood *et al* 1980; Rafferty 1988; Steward 1933, 1938; Thomas *et al* 1986.) Ethnographic information collection has centered primarily on the valley areas within the study area. Steward (1938) found Paiute people in Fish Lake Valley, but said that Shoshone people also used some of the same areas for collecting and that Shoshone and Paiute intermarried frequently. In a 1995 report by Fowler *et al* the California portion of Fish Lake Valley was identified as traditional homeland of the Timbisha Shoshone. However, they identified only one specific location as being of concern and that is a note that the Kennedy family lives in Oasis and still uses parts of the area. None of the Shoshone named locations fall within Fish Lake Valley, while Steward gave many Paiute names for places in Fish Lake Valley. Liljeblad and Fowler (1986) identified the California portion and much of the Nevada portion of Fish Lake Valley as Owens Valley Paiute territory. They also identified the major population concentration as being in the northern portion of the valley at the base of the White Mountains and some distance north of the South Oasis allotment. There are no ethnographic accounts of habitation of the Eureka Valley and Steward's (1938) map of the area indicates "no occupants." Deep Springs Paiute people and probably others, including Fish Lake Valley Paiute,

made trips into Eureka Valley to collect the seeds of Indian rice grass. Shoshone people from neighboring valleys may also have collected in Eureka Valley. The 1995 Fowler *et al* report identified Eureka Valley as part of the traditional homeland of the Timbisha Shoshone but no specific locations in the northern end of the valley are identified. The only specific areas in the valley identified as having ties to Shoshone people are in the southern end of the valley, which earlier ethnographers had identified as Shoshone, with the boundary between Paiute and Shoshone peoples running across the middle of the valley. Steward (1933, 1938) identified the occupants of Deep Springs Valley as Northern Paiute, who intermarried with groups in Owens Valley and Fish Lake Valley. Although some Paiute/Shoshone people are still resident in the area, most of the native occupants had left the area before 1900. The tribal groups with closest ties to the area now are the Paiute and Shoshone groups resident in Owens Valley. These groups have been contacted and will be consulted on current Native American uses of the allotments and concerns regarding resources.

b. Environmental Consequences

1. Impacts of Current Management and Proposed Action

These impacts will be identified by Paiute and Shoshone people through the consultation process.

2. Impacts of No Grazing

Cessation of grazing would result in cessation of any direct on-going impacts that may be occurring. There may still be effects resulting from permanent damage to resources or areas of concern that will remain even after grazing ceases. These matters must be identified by Native Americans with knowledge of the area.

3. Cumulative Impacts

Grazing has been going on for so long that impacts to Native American values are likely to have a cumulative effect. Some resources of importance may have been eliminated from the environment or seriously degraded, such as populations of native plants. Areas with sacred values may have been permanently compromised by cattle grazing and attendant activity. These matters must be identified by Native Americans with knowledge of the area.

c. Consultation

Consultation with Native Americans is required under the Protocol Agreement and under various laws and executive orders. Federally recognized and state recognized tribes and individuals whose traditional homelands may be affected by cattle grazing on these allotments have been contacted. Consultation will continue with those who identify concerns about the area. Paiute and Shoshone tribes in the Owens Valley who have identified interest in the study area have been contacted but consultation has not begun.

d. References

References listed at the end of the document

J. RECREATION

a. Affected Environment

The public lands in these allotments provide a wide range of outdoor recreational opportunities and experiences including backpacking/hiking, horseback riding, mountain biking, camping, hunting, photography, nature study, ATV and motorcycle riding, four-wheel driving, rock hounding/ mineral collecting, rock climbing and target shooting. Also on the very western edge of the Deep Springs allotment sits the Poleta Folds an area which is often used by geology classes as a natural science laboratory. Annually a Special Recreation Permit for use within the borders of the Last Chance and Eureka Valley allotments has been issued to a promoter for backcountry camping and vision questing. Additionally portions of the Piper Mountain Wilderness fall within the boundaries of all four of these allotments and within the South Oasis and Last Chance allotments are portions of the Sylvania Mountains Wilderness. Refer to the Wilderness section for details.

b. Environmental Consequences

1. Impacts of Current Management and Proposed Action

While participating in casual and permitted recreational pursuits participants may encounter such range improvements as fence lines, closed gates, cattleguards, corrals and water developments as well as encountering herds of cattle on the public lands. While range improvements such as closed gates and cattleguards may delay ones recreational pursuits these impediments do not create a significant impact on recreational opportunities. Conversely the sighting of livestock grazing on the open range is often very intriguing and of interest to visitors and enhances ones recreational experience.

2. Impacts of No Grazing

The elimination of grazing would have little effect on recreational opportunities in the region except for eliminating the experience of seeing cattle on the open range of the “Wild West.”. Until all range improvements were removed recreational participants may still encounter the remnants of these developments which may delay but not prohibit pursuing one’s recreational interest.

3. Cumulative Impacts

No cumulative impacts would be experienced by participants while partaking of recreational opportunities within the allotment.

c. Consultation

Identify specific user groups contacted and summarize results of consultation.

K. SOCIAL AND ECONOMIC VALUES

a. Affected Environment

The communities of Bishop, California and the Fishlake Valley area of Nevada are traditionally rural communities where ranching has played a dominant role. Bishop, California is has become more oriented toward tourism as recreationists seek opportunities in the Sierra Nevada, Inyo, and White

Mountains. However, ranching is still a substantial though less dominant element in the economy and social values still promote agricultural pursuits to some degree, e.g., the Burro & Mule Days festival in Bishop.

b. Environmental Consequences

1. Impacts of Current Management and Proposed Action

Both the current management and the proposed action would have no affect on social and economic values because ranching practices would continue without substantial change.

2. No Grazing

Locally the economic affect of the no grazing alternative would be negligible because there remains a substantial though dwindling community of ranchers in the area. The nearby Bishop community is increasingly supported by the recreational economy that is based on recreational opportunities in the Sierra Nevada, Inyo, and White mountains. The opportunities for ranching will still be supported by the leases offered by the Department of Water and Power, City of Los Angeles (LADWP). On the other hand the Forest Service is curtailing some of its leases in the mountains. Socially the area would lose a valuable educational community in Deep Springs College that integrates ranching practice with educational curriculum. The loss of grazing privileges to Deep Springs College would be significant in that it has a respected tradition in the local community.

3. Cumulative Impacts

The loss of grazing privileges by any one ranch is probably negligible to the local economy as a whole. Cumulative impacts would be felt in the Bishop, California and Fishlake Valley, Nevada communities because they are traditional ranching communities and part of the traditional character of these communities would be jeopardized by the loss this entity.

L. SOILS

a. Affected Environment

Soils in the area are generally poorly developed, well drained and coarse textured. The soil depth ranges from deeper alluvial materials to very shallow or non existent over the rocky substrate. The soils are susceptible to accelerated erosion from wind and water especially when the surface has been disturbed. Much of the soil has been subject to periodic disturbance due to livestock grazing for 140 years. Additional soil disturbance is occurring as a result of vehicle use on unpaved county roads, farming operations and utility Right-of-way maintenance.

Soil stability was evaluated in the Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments as part of the Rangeland Health evaluations. All sites evaluated were in the stable range. Soil impacts were noted at sites where cattle were concentrating. Some of these were developed sites at management facilities such as water developments.

b. Environmental Consequences

1. Impacts of the Current Management and Proposed Action

Direct and Indirect Impacts: Direct impacts to soils would occur through vertical and horizontal displacement and mixing as a result of the grazing activities. Additional direct impacts would include compaction and a reduction in pore space and infiltration rates. Different degrees of impacts would occur to soils from different portions of the grazing operation. Established watering sites and corrals concentrate the cattle into a small area resulting in nearly continuous trampling impacts to those sites. The trampling has resulted in increased compaction in the soil surface, elimination of vegetative cover, and destruction or disruption of biological soil crusts at these sites. Additional new impacts to soils at the established sites are unlikely. Sometimes the use is concentrated around riparian area for watering. This was noted a Willow Springs in the Last Chance Allotment. The site where cattle was a factor in not meeting rangeland health standards, was a riparian area.

As opposed to the intense use at concentration areas including watering and management facilities, the general grazing use is an extensive use with the animals and their hoof action spread over large areas. This use can be best characterized as a series of small impacted spots (hoof marks) with large areas of interspace. This use would not result in the loss of vegetative cover or increased compaction and reduced infiltration rates. It would result in a small increase in wind and /or water erosion potential over the background levels. Wind and water erosion rates are not expected to increase above current levels as a result of the Proposed Action for the areas away from the concentration areas.

Indirect impacts would occur as increase soil erosion from water and wind. The movement of soils by water during high flow events would occur both on the intense use areas and down associated drainages. The movement would involve both removal and deposition. The deposition could occur on the sites, adjacent to the site, along or in roads and through out the drainage. As most of the intense use sites are on shallow slopes, the increased water erosion is expected to be negligible and very localized. Wind erosion could occur on disturbed sites during the common high wind events in the spring. Wind erosion would result in losses of small particles from the surface and increased particulate emissions. The wind erosion losses diminish quickly over time as the small particles are lost from the surface. Erosion rates would only slightly exceed natural rates. The current SSF ratings for the allotment would not be expected to change significantly as a result of the Proposed Action.

Irreversible and Irretrievable commitment of Resources:

Soil losses due to the Proposed Action are irreversible and irretrievable.

Residual:

The Proposed Action would result in a very small loss of soils from some specific sites.

Cumulative Impacts:

The existing grazing activities would contribute little to any soil losses occurring on a regional basis. Many of the existing grazing intense use sites have been used for many years. Most of the regional erosion problems come from poor drainage on and adjacent to roads and rights-of ways.

Recommended Mitigation:

None

2. Impacts of No Grazing

Direct and Indirect Impacts:

Elimination of grazing would eliminate any additional impacts to soils as a result of cattle grazing. Soils at concentration areas would slowly return to a more natural compaction rate, infiltration rate and stability.

Irreversible and Irretrievable commitment of Resources:

Elimination of cattle will eliminate that commitment of soil resources.

Residual:

The same as Direct and Indirect Impacts.

Cumulative Impacts

Eliminating grazing activities would make little changes in soil losses occurring in the region. Most of the regional erosion problems come from poor drainage on and adjacent to roads and rights-of-ways.

Recommended Mitigation:

None

c. References

Listed at the end of the document.

M. SPECIAL STATUS PLANTS:

a. Affected Environment

Geyer's milkvetch (*Astragalus geyeri* var *geyeri*) is a special status plant species known in the Deep Springs Allotments.

b. Environmental Consequences

1. Impacts of the Current Management and Proposed Action

Direct and Indirect Impacts:

Geyer's milkvetch was recently found in Deep Springs Valley. It is unknown how it responds to grazing.

Irreversible and Irretrievable commitment of Resources:

If grazing were to eliminate Geyer's milkvetch from Deep Springs Valley it would not jeopardize the continued existence of the species as is a California Native Plant Society list 3 species and is found a number of other places.

Residual:

None

Cumulative Impacts:

None.

Recommended Mitigation:

Locate the species, evaluate potential grazing impacts and apply protective mitigation if necessary.

2. Impacts of No Action:

No special status plants will be impacted by this alternative.

c. References

Listed at the end of the document.

N. WASTE, HAZARDOUS OR SOLID

a. Affected Environment

Detailed surveys of hazardous or solid wastes have not been undertaken on this allotment. BLM maintains no records of reportable spills in the allotment. Although use of motorized vehicles and equipment by the livestock operator may have resulted in periodic and scattered spills or releases of fuel and petroleum products in the allotment, none are documented. For this reason we believe that the proposed action and the alternatives would have no affect on hazardous or solid waste.

O. WATER QUALITY, SURFACE AND GROUND WATER (CRITICAL ELEMENT)

a. Affected Environment

These Allotments are located on the eastern base of the White Mountains and the western edge of the Great Basin. The climate and annual precipitation is typical for the desert environment. Mean annual perception is estimated to be around 6 inches. Large variations in yearly perception volumes are common. Most of the perception comes in the form of rain at the lower elevation and many times snow at the highest elevations. Most of the perception falls between November and mid March. A portion of the rainfall can be a result of summer events. Large summer rain events are not common, but can be quite large causing considerable watershed damage when they do occur. A number of canyons drain through the allotments from the White Mountains and Sylvania Mountains. Storm water flows drain to the northeast into the Fish Lake Valley or south into Eureka or Deep Springs Valleys. Riparian areas are found in several of the canyons and a permanent flowing streams exist in Wyman Canyon in Deep Springs Valley. The stream flow in the canyon disappears at the mouth of the canyon into deep alluvium. A number of seeps and springs occur in the allotments. As noted in the appendix, a number of sites have been developed for livestock water.

The U.S. Geological Survey identified portions of Two large watersheds in the allotments. These are the Deep Springs Valley-Eureka Valley basin and the Fish Lake Valley basin. Storm water flows from the Deep Springs Allotment, South Oasis, Eureka Valley and Last Chance Allotments end up in one of three closed subbasins. These are Deep Springs Valley Fish Lake Valley and Eureka Valley. The Final Unified Watershed Assessment (1998) classified the Deep Springs Valley-Eureka Valley basin as a category 1 (impaired) low priority watershed and the Fish Lake Valley basin as a category III watershed. The category I low priority classification indicated that that watershed was impaired but of a lower priority to receive Clean Water Action Plan grants from the federal Nonpoint Source Program. The category III classification indicates pristine type conditions.

The Lahontan Basin Plan identifies beneficial uses (chapter 2) and water quality objectives (chapter 3) for the surface waters in the allotments. The basin plan lists specific beneficial uses as standards to maintain or meet. For many of the sources, the plan states that beneficial uses includes municipal, agricultural, ground water recharge, recreation 1 & 2, warm water fisheries, cold water fisheries and wildlife. The minor wetlands category has an additional beneficial use of freshwater recharge.

The Clean Water Act and the USEPA classify water pollution from rangelands as nonpoint source pollution (NSP). Management of NSP is through a series of management practices called best management practices (BPS). According to the USEPA, "The restoration or protection of designated water uses is the goal of BMP systems designed to minimize the water quality impact of

grazing and browsing activities on pasture and range lands.” Management practices can minimize the delivery and transport of pollutants to surface and ground waters. According to the USEPA, management practices control the delivery of NPS to receiving water resources by:

- minimizing pollutants available;
- retarding the transport and/or delivery of pollutants; and/or,
- remediating or intercepting the pollutant before or after it is delivered to the water resource.

The USEPA has produced guidance titled *National Management Measures to Control Nonpoint Pollution from Agriculture*. In that document section 4E addresses grazing management. The following grazing management measure is taken from that document:

“Manage Rangeland, pasture and other grazing lands to protect water quality and aquatic and riparian habitat by:

1. improving or maintaining the health and vigor of selected plant(s) and maintaining a stable and desired plant community while, at the same time, maintaining or improving water quality and quantity, reducing accelerated soil erosion, and maintaining or improving soil conditions for sustainability of the resources. These objectives should be met through the use of one or more of the following practices:
 - a. maintain enough vegetative cover to prevent accelerated soil erosion due to wind and water;
 - b. manipulate the intensity, frequency, duration and season of grazing in such a manner that the impacts to vegetation and water quality will be positive;
 - c. ensure optimum water infiltration by managing to minimize soil compaction or other detrimental effects;
 - d. maintain or improve riparian and upland vegetation;
 - e. protect streambanks from erosion;
 - f. manage for deposition of fecal material away from water bodies and to enhance nutrient cycling by better manure distribution and increased rate of decomposition; and,
 - g. promote ecological and stable plant communities on both upland and bottom lands sites.
2. excluding livestock, where appropriate, and /or controlling livestock access to and use of sensitive areas, such as streambanks, wetlands, estuaries, ponds, lake shores, soils prone to erosion, and riparian zones through the use of one or more of the following practices:

- a. use of improved grazing management systems (e.g. herding) to reduce physical disturbance of soil and vegetation and minimize direct loading of animal waste and sediment to sensitive areas;
 - b. installation of alternative drinking water sources;
 - c. installation of hardened access points for drinking water sources;
 - d. placement of salt and additional shade, including artificial shelters, at locations and distances adequate to protect sensitive areas;
 - e. provide stream crossings, where necessary, in areas selected to minimize the impacts of the crossings on water quality and habitat; and,
 - f. use of exclusionary practices, such as fencing (conventional and electric), hedgerows, moats and other practices as appropriate
- and
3. achieving either of the following on all rangelands, pastures and other grazing lands not addressed above:
- a. apply the planning approach of the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) to implement the grazing land components in accordance with one or more of the following from NRCS: a Grazing Land Resource Management System (RMS); National Range and Pasture Handbook (USDA-NRCS, 1997b); and NRCS Field Office Technical Guide, including NRCS prescribed Grazing 528A;
 - b. maintain or improve grazing lands in accordance with activity plans or grazing permit requirements established by the Bureau of Land Management, the National Park Service, or the Bureau of Indian Affairs of the U.S. Department of Interior, or the USDA Forest Service; or other federal land manager.”

The text in number 3 above is included in the state of California guidance called *California Nonpoint Source Encyclopedia* (SWRCB 2004) updated July 2004.

b. Environmental Consequences

1. Impacts of Current Management and Proposed Action:

Direct and Indirect Impacts:

Range inspections and Rangeland Health Assessments have documented one site in Last Chance Allotment with problems affecting water quality. The site at Willow Spring did not meet rangeland health standards. The site did not meet standards as a result of livestock use. It is likely that the site contributes directly or indirectly to the degradation of water quality. Cattle use directly in the water was observed. On these sites cattle were contributing sediments, chemical and bacteriological pollutants directly to the water. The opening of the canopy and spreading out of the water also causes increased water temperatures and higher evaporation rates. It is generally recognized that

sediment produced by runoff is the most significant pollutant from rangelands. The Proposed Action does not represent point source impacts to water quality and no 401 permit is necessary. Impacts from the Proposed Action represent non-point-source impacts which are controlled by the implementation of Best Management Practices (BMP).

Irreversible and Irretrievable commitment of Resources:

Sediments represent soil losses which are very slow to recover. Water losses from the watershed are not recoverable and are not available for plant growth and groundwater recharge.

Residual:

Same as direct impacts

Cumulative Impacts:

Grazing represents only a small portion of the non-point-source pollution in the watershed.

Recommended Mitigation:

Use fencing or other management practice to exclude cattle from Willow Spring to allow the site to achieve and maintain health standards.

2. Impacts of No Grazing

No impacts to water resources would occur due to cattle grazing.

c. References

Listed at the end of the document

P. WETLANDS/RIPARIAN ZONES

a. Affected Environment

In the Deep Springs Allotment, many of the springs are on private land. The riparian that is present on the BLM lands consists of about a mile of riparian on Wyman Creek, an unnamed spring in Wyman Canyon, Buckhorn Spring, Cuna Spring, North Bog Mound Spring, riparian below Antelope Spring, and a spring area near Birch Canyon. All of these riparian areas are in good condition.

In the South Oasis Allotment, One Tubb, Two Tubb, and Piper Springs occur in the west mountainous portion of the allotment.

Willow Springs and Kincaid Springs occur in the Last Chance Allotment.

Eureka Valley Allotment has no water sources.

b. Environmental Consequences

1. Impacts of Proposed Action

In the Deep Springs Allotment, riparian area are in good condition and exhibit no adverse impacts from cattle use.

In the South Oasis Allotment, cattle receive water from wells rather than springs or riparian areas, avoiding degradation of riparian habitat. In some years, One Tubb Spring has received light use by cattle. This spring is important to wildlife and should be monitored periodically to insure maintenance of healthy riparian vegetation. Currently, One Tubb Spring is not used since water is hauled in to the cattle instead. Cattle do not use Two Tubb Spring because it is in rugged, inaccessible country. Two Tubb Spring was once developed by the CA Dept. of Fish and Game as a wildlife watering site, but was not maintained. Other small springs are located in rugged country and are not easily accessed by cattle.

In the Last Chance Allotment, cattle use from several years ago has deteriorated the riparian habitat at Willow Springs in Cucomongo Canyon. Dense stands of rabbitbrush (*Chrysothamnus nauseosus*) are present, and both bank erosion and head-cutting are evident. However, the habitat is recovering. If cattle are expected to be using Willow Springs, the area should be fenced and water piped to a trough outside of the riparian. Kincaid Spring in the Sylvania Mountains is a seep with little riparian vegetation. Cattle and deer use this spring. It is important to monitor Kincaid Spring for potential cattle damage.

Eureka Valley has no water sources to attract cattle. Cattle only use this allotment when lush spring forage is present. The allotment has been grazed only twice in the last 13 years.

2. No Grazing

Elimination of grazing would not have a impact on the riparian areas.

3. Cumulative Impacts

Cumulative adverse impacts from past grazing are visible at Willow Spring in the Last Chance Allotment. However, cattle have not grazed there for several years, and the spring is recovering. If the spring is fenced, there will be no cumulative adverse impacts from grazing.

Q. WILD AND SCENIC RIVERS

a. Affected Environment

The proposed action and alternatives would have no affect on wild and scenic rivers because there are no rivers so designated in the allotment.

R. WILDERNESS

a. Affected Environment

There are 5 cattle allotments within the Piper Mountain and Sylvania Mountains Wilderness areas. Four of the five are up for renewal at this time. They are the Deep Springs, South Oasis, Eureka Valley and Last Chance allotments.

All four of the 7,707 acres or 19% of the Deep Springs Allotment lies within the Piper Mountain Wilderness. Another 7,370 acres or 50% of the South Oasis Allotment lies within the wilderness. Approximately 16,085 acres or nearly 100% of the Eureka Valley Allotment lies within the wilderness. In addition, about 13,637 acres or 39% allotments extend into the 75,575 acre Piper Mountain Wilderness. About of the Last Chance Allotment lies within this wilderness. These allotments comprise 59% of the total wilderness area.

Two of the allotments extend into the 17,820 acre Sylvania Mountains Wilderness. Approximately 2,456 acres or 17% of the South Oasis Allotment lies within the Sylvania Mountains Wilderness. Another 15,364 acres or 44% of the Last Chance Allotment lies within this wilderness. These allotments comprise 100% of the total wilderness area.

The Piper Mountain Wilderness is located in the transitional mountainous region between the White and Inyo Mountains and in Deep Springs, Fish Lake, and Eureka valleys. It shares much of its southern boundary with Death Valley National Park and its eastern boundary with the Sylvania Mountains Wilderness. The varied habitats of the Great Basin grade into those of northern Mojave Desert in Eureka Valley. Saltbush-scrub is common at western lower elevations. Joshua tree woodland, sagebrush, and pinyon-juniper woodland appear at higher elevations. Greasewood-scrub and creosote-scrub are found at eastern lower elevations. Noxious weed populations are known to exist. There are large populations of Russian thistle (*Salsola tragus*) along major highways in the intermountain transitional region and in Deep Springs and Fish Lake valleys. Tamarisk spp. can be found at isolated sites with water. In addition, an isolated population of *Halogeton glomeratus*, a red-listed species of special concern, has been identified just outside of the adjacent Sylvania Mountains Wilderness at the eastern edge of Eureka Valley. No special status plant species are known to occur, but the area has not been extensively inventoried. The rare fishhook cactus, *Sclerocactus polyancistrus*, can be found throughout the mountainous regions, particularly in Joshua Flats. Cryptobiotic soil can be found in Joshua Tree woodland communities in the intermountain region and on the floor of northern Eureka Valley. There are isolated seeps and springs in the area supporting small riparian communities of special interest. Most occur on the wilderness boundary at the eastern edge of the lake in Deep Springs Valley. Other isolated springs (One-Tub, Two-Tub (Tule), and Wheelbarrow (Wyler)) are found in the Piper (Chocolate) Mountains between Deep Springs and Eureka valleys. The springs in Fish Lake valley are one of only two known localities for black toads (*Bufo exsul*), an endemic species. Vegetation, especially in riparian areas, is affected primarily by burros and wild horses and by authorized activities such as grazing and water diversions for wildlife developments. The entire Piper Mountains Wilderness is part of the Soldier Pass Wildlife Habitat Management Area (WHMA) for mule deer and bighorn sheep. The wilderness also provides important habitat for prairie falcons and bats.

The Piper Mountain Wilderness is a popular camping and hiking area. The area is among the most accessible and the most remote, natural and pristine of all of the Ridgecrest Field Office's wilderness areas. Deer hunters use mountainous regions. Backpackers also use the area, although less frequently, because of the scarcity of water. The wilderness is largely defined by perimeter roads. Two vehicle corridors (Piper/Chocolate Mountain and Horse Thief Canyon) bisect the area through Eureka Valley: This provides for several good camping and staging areas for wilderness activities throughout the valley and surrounding ranges. This area is extremely popular among vision quest

groups. The School of Lost Borders has obtained commercial permits for conducting two vision quests here per year over the past 10 years. The area offers superb opportunities for solitude and for primitive and unconfined recreation. There are no developed trails. Most visitors strike-out cross-country on foot, traveling across varied topography ranging from the flat expanses of the valley floors, to narrow, choked canyons, to broad, rolling mountainsides and ridges, to rocky prominences, and steep-sided scree slopes. Piper Mountain and Mt. Nunn are both on the Sierra Club's Desert Peaks list. Sweeping views of both Deep Springs and Eureka valleys can be enjoyed from several vantage points in the high mountains. The area is very natural and pristine. There is one abandoned mine site that still needs to be closed and rehabbed. Most of the other old routes leading to historic gold mining sites were reclaimed long ago. Recent route reclamation efforts have been largely successful in closing all of the estimated 31 miles of jeep trails that formerly existed in the area. The activity contributing the most to the diminishment of the overall naturalness of the area has been cattle grazing throughout the 5 allotments.

Currently, there are a total of 15 identified range developments in the Piper Mountain Wilderness for all allotments, and one wildlife spring development and 1 enclosure at Wheel Barrow Springs (5843). All of these developments pre-existed wilderness designation in 1994, but not all were in repair and in-use at the time of designation. Of the 15, fourteen are operative and still in-use. They include 5 fences, at least 4 troughs, 2 pipelines, 1 storage tank, 1 enclosure, and 1 spring development. These are maintained in a variety of ways, none of which requires motorized access, the use of motorized or mechanized equipment, or any other action normally prohibited under the Wilderness Act. One is presumed to be dysfunctional (5086, One-Tub Spring) and is not proposed for reconstruction at this time. A new pasture fence is being proposed in Deep Springs Valley to better distribute cattle. This fence, referred to here as the Mid-Valley Electric Fence, would be a recoilable, electric fence extending approximately 200 feet into the Piper Mountain Wilderness.

The Sylvania Mountains Wilderness abuts the Piper Mountain Wilderness and the California-Nevada border. Death Valley National Park borders this wilderness on its west and south ends. The wilderness starts in Eureka and Fish Lake valleys and rises through a series of rolling hills to a core of rough, deeply bisected mountains approaching 8000 feet at the California/Nevada border. The varied habitats of the Northern Mojave Desert join mountainous cooler (Great Basin) region plants and animals. One can find cholla, beavertail, and Joshua trees, interspersed with buckwheat, big sage, bitterbrush, and pinyon-juniper woodland in protected inner basins. The rare fish hook cactus, *Sclerocactus polyancistrus*, can be found throughout the area. Sweeping view of Eureka Valley and Fish Lake valley can be had from high vantage points. Numerous drainages pour out of the mountainous region down the hills and into the lower desert from all sides.

Riparian communities, which are of special interest, occur in some of the canyons. The three principal springs in the area are: Willow Springs in Cucomungo Canyon, Kincaid Springs in Sylvania Canyon, and Hidden Springs in the Sylvania Mountains along the California/Nevada border. These areas fall under special protective management as Unusual Plant Assemblages and are evaluated for Proper Functioning Condition (PFC). Kincaid Springs is relegated to a small spring box and supports very little riparian vegetation. Hidden Springs emerges as a seep on a steep hillside supporting grasses and rabbitbrush within the pinyon-juniper zone. Water is piped from this spring down to a cattle trough on a flat below. Willow Spring supports the most robust riparian community of them all, featuring willows, wild roses, grasses, and sedges, as well as rabbitbrush. Historically, this spring has not met Proper Functioning Condition with respect to stream morphology, vegetative cover, or erosion/deposition standards. Some of this is due to deer browsing as well as cattle grazing. The wilderness provides excellent habitat for deer at upper elevations.

The Sylvania Mountains Wilderness offers outstanding opportunities for solitude and for primitive and unconfined recreation. People camp, hike, and hunt in this area. However, very few people visit this area and even fewer get out to explore it on foot. As a consequence, opportunities for solitude and for primitive and unconfined recreation rise steeply with the distance one travels from the perimeter access roads. The wilderness is largely natural and pristine. There is one intact cabin structure along the wilderness boundary at Willow Springs. A few other old routes reclaimed long ago, bulldozed areas, old camps, and collapsing structures associated with historic gold mining sites, exist. Recent route restoration efforts have been mostly successful in closing the estimated 16 miles of old jeep trails/vehicle ways inside of wilderness. The Sylvania Mountains Wilderness is also extremely remote and almost entirely encircled by other wild lands: the Piper Mountain Wilderness to the west, Death Valley National Park to the west and south, and Nevada's Pigeon Springs Wilderness Study Area (WSA) to the northeast.

Currently there are a total of 16 range developments inside of the Sylvania Mountains Wilderness. All of these developments pre-existed wilderness designation in 1994, but not all were in repair and in use at the time of designation. Of the 16, eleven are still operative and in use. They include 4 fences, 3 troughs, 2 spring developments, 1 pipeline, and 2 dirt catchments. These are maintained in a variety of ways, none of which requires motorized access, the use of motorized or mechanized equipment, or any other action normally prohibited under the Wilderness Act. Of the five range developments that are dysfunctional, one, a trough at Kincaid Spring (5065), is proposed for replacement.

Current use-levels and those in place at the time of wilderness designation (October 1994) for the four allotments are described as follows:

The Deep Springs (perennial) allotment supported 450 to 536 cattle using 1306 to 1455 AUMs annually during the period from 1992-1995. Currently approximately 450 cattle graze this allotment each year, using a total of 1233 AUM's annually. This is 20 AUMs below the 1250 AUMs currently authorized by permit. There is a winter grazing season (December-February) and a spring grazing season (March-May). The allotment is divided into 5 pastures. Pastures are rotated so that each pasture has a minimum of 9 months of rest between periods of being grazed. About 19% of this allotment is inside the Piper Mountain Wilderness. Historically cattle activity in the wilderness portion (mountainous east side and northeast corner) of the allotment has been light (<40% use). Rangeland Health Assessments have not been completed for this allotment.

The South Oasis (perennial) allotment supported 17 to 85 cattle using 314 to 474 AUMs annually during the period from 1992-1995. Cattle grazed this allotment from spring to early fall (April to October). The allotment was not used after 1999. In 2002, the permit was transferred to Deep Springs College. Currently the college grazes about 225 cattle, using 420 AUMs annually, with no established use-season. About 67% of this allotment is in wilderness (50% in Piper Mountain and 17% in Sylvania Mountains wildernesses). Historically, the southwest half of the allotment in the mountainous region of the Piper Mountain Wilderness between Piper (Chocolate) Mountain and the North Eureka Valley Road has received light use (<40% use). In the adjacent flats northeast of the North Eureka Valley Road in the Sylvania Mountains Wilderness, cattle use has been moderate (40-60% use), particularly around water developments located in the area. This allotment met all standards in the Rangeland Health Assessment, except that for native species. This was because of isolated stands of tamarisk found in the allotment that were not attributed to cattle use. More common invasive species associated with cattle use such as Russian thistle (*Salsola tragus*) and

Cheat grass (*Bromus tectorum*) are not identified as species of concern in Rangeland Health Assessments. Both occur in wilderness on this allotment. Russian thistle can be found in large patches at the south end of Fish Lake Valley in the flats and along the roadside in the area northeast of the North Eureka Valley road leading into Eureka Valley.

Nearly 100% of the Eureka Valley allotment falls inside the Piper Mountain Wilderness. There is no water and there are no range developments, water or otherwise, in this allotment. The Eureka Valley allotment is an ephemeral as opposed to perennial cattle allotment. This means that the area is grazed only in wet years when enough ephemeral forage is available for cattle. The allotment is traditionally used in conjunction with the South Oasis Allotment which immediately adjoins it. The two allotments are not separated by a fence, so cattle can drift between the two. There are no figures for the number of cattle or AUMs used in the period from 1992-1995, because the area has been grazed only twice in the last 13 years, in 1998 and in 2003. In 1998, approximately 20 cattle grazed the area, using a total of 22 AUMs. The number of cattle or AUMs used in 2003 is not known. Use levels (AUMs or expected number of cattle) are not preset for ephemeral allotments. The rancher applies for use of such allotments separately and appropriate use-levels for that year are determined at that time. A Rangeland Health Assessment has not been completed for this allotment.

The Last Chance (perennial) allotment supported 337 cattle annually, using 1197 AUMs during the period from 1992-1995. Traditionally this was a year-round allotment running from March through February of each year. It was used in conjunction with Nevada BLM's Magruder Mountain Allotment which held most of the water. In 1994, half of the allotment was transferred to Death Valley National Park who declared it unsuitable for grazing. In 1996, the Magruder Mountain Allotment was closed for administrative reasons and as a consequence, the allotment has not been grazed since 1996. Approximately 85% of the Last Chance Allotment falls inside wilderness (39% within the Piper Mountain Wilderness and 44% within the Sylvania Mountain Wilderness). There are three watering sources for this allotment: the Kindcaid Spring box, the dysfunctional pipe and trough at Hidden Springs, and the still operative Willow Springs development which has not met three of the criteria for Proper Functioning Condition. A Rangeland Health Assessment is pending for this allotment.

There are no wilderness management plans for any of these areas that addresses grazing. South Oasis is the only allotment that has an Allotment Management Plan (AMP). No Allotment Management Plans have been developed for the Deep Springs, Eureka Valley, or Last Chance Allotments.

b. Environmental Consequences

1. Impacts of Proposed Action (Current Management)

Cattle-grazing is an authorized but non-conforming use in wilderness. The proposed action is continue cattle grazing in wilderness on these four allotments at approximately the same levels as that permitted in 1994 when these areas became wilderness. For Deep Springs this means grazing approximately 417 cattle per year, using 1250 AUMs over the winter and spring grazing seasons. For South Oasis, this means grazing approximately 69 cattle per year, using 476 AUMs from April through October. For Last Chance this has been interpreted to mean permitting approximately 136 cattle to graze year-round from March through February, using approximately 1632 AUMs. This is a decrease from 1992-1995 in the approximate number of cattle anticipated to graze. The permit allows for 1632 AUMs to be grazed which is an increase of 25% over what was actually grazed in

the period from 1992-1995. The figure of 1632 AUMs is an adjusted figure from the more than 3000 AUMs permitted during the period from 1992-1995 when the allotment still included large areas now incorporated in Death Valley National Park. In Eureka Valley, it means grazing the area for ephemeral forage only at variable times depending on the availability of ephemeral forage.

Wilderness values are adversely affected by loss of water quality, loss of vegetative cover, trampling, trailing (as in multiple, braided trails), erosion of seeps and spring banks, spring developments and other man-made support structures, and the spread of invasive species. The proposed action is to continue grazing at current (1994) permitted use levels in wilderness. Under this alternative, adverse impacts on naturalness, untrammeledness, aesthetic and scenic qualities of wilderness, specific wilderness resources, and on opportunities for quality primitive and unconfined recreation would continue to occur at approximately the same levels as before. These effects would be most severe around scarce water sources (Willow Springs) and in years of good ephemeral forage, in the most marginal, sensitive, and pristine areas of northern Eureka Valley.

Proposals to continue grazing on the Last Chance and Eureka Valley Allotments should be fully evaluated before a final decision is made. The Last Chance Allotment may no longer be functional, given the narrow constraints placed upon it by both Death Valley National Park acquisitions and the loss of the adjoining Magruder Mountain Allotment. In Cucumongo Canyon, Willow Springs should be restored to Proper Functioning Condition (PFC) before pressure from cattle is intensified without benefit of access to alternative water sources in the area. If used by cattle, Willow Springs should be carefully monitored for PFC.

Ephemeral grazing in the Eureka Valley Allotment raises high concern, both because of the sensitivity and extremely high quality of the resources there and its uniqueness in this regard to the other valleys covered by these allotments. Northern Eureka Valley contains large patches of crytobiotic soil that could be destroyed by cattle trampling. Perennial vegetation in the area has been drought-stressed for many years and has not yet recovered. Cattle do not discriminate between ephemeral and perennial vegetation. The northern part of Eureka Valley is currently free of any of the exotic invasive species plaguing other areas within these allotments. Historically, cattle-grazing has been responsible, at least in part, for the spread of Russian thistle on the Eureka Sand Dunes and in the smaller sand dune complexes west of the large dunes in southern Eureka Valley (now within Death Valley National Park). This has resulted in a loss of native habitat for a variety of unique, endemic sand dune species.

All proposed actions in wilderness involving the use of motorized vehicles, or motorized and mechanized equipment, structures, installations, or any other action normally prohibited under the Wilderness Act will require a separate, project-specific Environmental Assessment with a Minimum Action/Minimum Tool Analysis. For range structures and projects that are non-functional, an EA will determine first whether it should be replaced, reconstructed, maintained, or removed.

2. Impacts of No Grazing Alternative

The impacts of no grazing on wilderness would be to maintain and improve naturalness, untrammeledness, aesthetic and scenic qualities, specific adversely-affected resources, and opportunities for quality primitive and unconfined recreational experiences.

3. Cumulative Impacts

Under the proposed action, adverse impacts would be expected to accrue, particularly in the more marginal and sensitive areas (Cucumongo Canyon and northern Eureka Valley), if the objectives of rangeland health assessments and proper functioning conditions for seeps and springs were not consistently met. This is particularly likely in the absence of adequate rangeland health assessments and allotment management plans for these areas.

Under the no grazing alternative, naturalness and untrammelledness, aesthetic and scenic qualities, natural resources and opportunities for primitive and unconfined recreation all would be enhanced.

S. WILD HORSES AND BURROS

a. Affected Environment

Wild Horse and Burro:

The Piper Mountain Herd Management Area (HMA) is addressed in the CDCA Plan. This HMA consists of approximately 69,000 acres of public land. The present AML was established in the CDCA plan at 17 horses (201 AUMs) and 82 burros (686 AUMs). This HMA occurs on the Nevada State boundary where seasonal movements and mixing of these animals occur with adjacent HMAs located in Nevada. There has been a shift in the number and location of wild horses and burros throughout the area. The burro population has dropped from an estimated 150 in 1980 down to the present estimate of 0 burros. It is speculated the removals conducted by Nevada and seasonal movements to Sand Spring where total removals have been conducted, has reduced the burro populations. The wild horse population at Piper Mountain has also dropped from an estimated 40 horses in 1980 to 0. Sometime in the mid 1980's, there was a shift in the wild horse population. A group of 30 or more horses were seen in Deep Springs Valley foraging in the alfalfa fields during the summer. The herd apparently dispersed further north into the Furnace Creek area and Fish Lake Valley up to Wild Horse Canyon. Information from the Tonopah Wild Horse and Burro Specialist, indicates there is some seasonal movements of wild horses between this herd and the Fish Lake Valley and Silver Peaks HMA in Nevada. Due to the fencing of private land for alfalfa and other irrigated crops, it would be very unlikely to see horses drifting back to Piper Mountain.

It is anticipated that the long term management for wild horses and burros for this area will be re-evaluated sometime in the future, especially in relation to the number and location of the animals and their free-roaming nature which may have been affected by the variety of fences that have been developed over the years to protect agricultural crops and the development of grazing pastures. An evaluation to the wild horse and burro element is necessary to determine if fences may have impacted the distribution of wild horses and burros through out the HMA.

The Piper Mountain HMA include areas common to livestock grazing. The following table reflects the livestock grazing Allotments within the Piper Mountain HMA and allocated AUMs for wild horses and burros within them.

Allotment	Allocated Wild Burros AUMS	Allocated Wild Horse AUMs
White wolf	27	0
Oasis Ranch	39	14
South Oasis	223	65
Last Chance	164	16

Deep Springs	0	26
Eureka Valley	Not Assessed	Not Assessed

b. Environmental Consequences

1. Impacts of Proposed Action

Direct and Indirect Impacts:

There would be no impacts to wild horses or burros. Currently, there are no wild horses and burros within the allotments that are being renewed. The rangeland health assessments for the South Oasis Ranch Allotment did not indicate impacts from wild horse and burro use.

Irreversible and Irretrievable Resources:

There would be no irreversible and irretrievable impacts. The forage allocations from the CDCA Plan allows for the opportunity to re-evaluate if the Piper Mountain HMA is suitable for re-introduction of wild horses and burros. It is anticipated that the long term management for wild horses and burros for this area will be re-evaluated in relation to the number and location of the animals and their free-roaming nature which may be affected by the variety of fences that have been developed over the years to protect agricultural crops and the development of grazing pastures.

Residual:

Under the current allocation of forage and past management, there is no anticipated residual impacts.

Cumulative Impacts:

The cumulative impacts of renewing the grazing permits should not affect the wild horses and burros with the current forage allocations for all species. However, the cumulative impacts by fencing projects, may have impacted the free-roaming nature of wild horses and burros.

Recommended Mitigation:

There is no anticipated mitigation. However, an analysis of the Piper Mountain HMA for the future management of wild horses and burros need to be assessed before a determination can be made. The biggest concern would be to the free-roaming nature of wild horses and burros through the allotment that might be affected from pasture or drift fencing. An evaluation to the wild horse and burro element is necessary to determine if fences may have impacted the distribution of wild horses and burros throughout the HMA and if it is feasible to try and manage either wild horses and/or burros. If it is determined this may be the case, some mitigation measures would be evaluated in the analysis for the management of wild horses and/or burros, such as removing fence structures and allowing access to natural waters

2. Impacts of Current Management if different than proposed action

3. No Grazing

Direct and Indirect Impacts:

There would be the potential for increasing range condition. An evaluation would be done to determine if the available forage and waters may allow for the reintroduction of wild horses and/or burros. Evaluation of existing fence lines used in the management of cattle grazing would potentially be removed to increase the ability for the free-roaming nature of wild horses and burros.

Other range improvements would be evaluated for their suitability in the management of wild horses and burros. This may determine if a re-introduction of wild horses and burros to these areas would be warranted under their current forage allocation. The area would also be evaluated for its suitability as a wild horse and /or burro range which would change the available AUMs for these animals.

Irreversible and Irretrievable:

No irreversible and irretrievable impacts to resources are anticipated. Wild horses and burros can be re-introduced to areas where their populations are below the appropriate management level.

Residual:

There would be the potential for increasing range condition which may allow for the reintroduction of wild horses and/or burros due to the increased available forage and waters

Cumulative Impacts:

If other grazing lease renewals are not renewed within the Piper Mountain HMA, the same impacts as described in the direct and indirect impacts for this section, but to a larger scale.

Recommended Mitigation:

An analysis of the Piper Mountain HMA for the future management of wild horses and burros need to be assessed before a determination

T. WILDLIFE (T&E)

a. Affected Environment

A small population of mule deer (*Odocoileus hemionus*) resides in the Piper Mountain Area. In addition, a number of mule deer from the White Mountains are believed to migrate to the area during the winter. These animals remain until spring. Deer utilize succulent species (grasses and forbs) that occur along stream courses and around springs in the spring and early summer months in particular. The nutritional needs of deer (particularly pregnant does) are greatest during the spring and early summer months. Riparian areas are known to be important fawning sites. Successful fawn rearing occurs in riparian areas where water, suitable hiding cover, and high quality forage are in close proximity. Deer are known to water regularly at North Piper Spring and at One Tub and Two Tub Springs on the South Oasis Allotment. Early spring annual vegetation is important for fawn survival, as well as cover associated with riparian areas. Bitterbrush and other shrubs are important food plants, especially in the fall when the nutritional value of other plants drops. Mule deer habitat is in the western part of the South Oasis Allotment in the more rugged area west of Eureka Valley Rd. This area receives only slight or no use by cattle. The area northeast of Eureka Valley Road is out on the flats and receives little use by deer. In the South Oasis Allotment, forage plants used by both cattle and wildlife consist of *Atriplex canescens* (Fourwing), *Graya spinosa* (Hopsage), *Acamptopappus sphaerocephalus* (Goldenhead), *Krascheninnikovia lanata* (Winterfat), *Mendora spinescens*, *Ephedra nevadensis* (Mormon Tea), *Achnatherum speciosa* (California Needlegrass), *Hilaria sp.*, *Sitanion hystrix* (Bottlebrush or Squirreltail), and *Achnatherum hymenoides* (Indian Rice grass). In the Deep Springs Allotment, forage plants consist of *Krascheninnikovia lanata* (Winterfat), *Eriogonum sp.* (Buckwheat), *Atriplex confertifolia* (Shadscale), *Atriplex canescens* (Fourwing), *Achnatherum hymenoides* (Indian Rice Grass), and *Achnatherum speciosa* (California Needlegrass). Cattle receive water from springs and wells on the Deep Springs allotment. Wildlife

also depend on these springs. Forage plants used by both cattle and wildlife on the Last Chance Allotment are *Graya spinosa* (Hopsage), *Ephedra nevadensis* (Mormon Tea), *Lepidium Fremontii* (Desert Alyssum), *Mendora spinescens*, *Artemisia spinescens* (Budsage), *Achnatherum hymenoides* (Indian ricegrass), and *Sitanion hystrix* (Bottlebrush or Squirreltail).

The North Mojave metapopulation of desert bighorn sheep (*Ovis canadensis nelsoni*) come into the valley to drink at the springs and riparian areas. Bighorn sheep are recolonizing the Deep Springs area. In 1995, the population was estimated to be less than 25 animals. However, the population has been growing during the past 9 years. Bighorn sheep have been seen on the Deep Springs Allotment east of Deep Springs Lake in the Piper Mountains.

Mountain lions, bobcats, and coyotes occur throughout the allotment and feed mainly on native prey. Big and small game animals are hunted under CDFG regulations. The main species of upland game birds are chukar and mourning dove which are ground- nesting birds. California quail could occur along Wyman Creek. Populations of upland bird species fluctuate with the weather, mainly precipitation. Therefore, relating population levels to management is difficult.

The pygmy rabbit (*Brachylagus idahoensis*) could occur in certain parts of the allotments. This species is listed as a California sensitive species. The pygmy rabbit is strictly confined to suitable stands of sagebrush (primarily *Artemisia tridentata*) and rabbitbrush (*Chrysothamnus* spp.). This habitat type is occurs in higher elevations of the Deep Springs, South Oasis Allotments, and Last Chance Allotment.

All native bird species on the allotments are protected under the Migratory Bird Treaty Act, but some have additional status. Raptors, as a group use the upland primarily for hunting prey. Thus, they require a healthy vegetative community that produces an abundance of rodents, rabbits, and other prey species. The prairie falcon, a BLM sensitive species, nests at sites with steep cliff faces and forages over a wide area. In addition to resident bird species, an abundance of migratory bird species use the springs and water sources as they pass through the area in spring and fall.

The burrowing owl (*Athene cunicularia*) is a California Species of Special Concern that is a year-around resident within these allotments. A BLM biologist and BLM botanist observed a burrowing owl in the South Oasis Allotment along the Eureka Valley Road on May 19, 2004. In the state of California, conversion of grasslands and pasturelands to agriculture and destruction of ground squirrel colonies have been the main factors causing the decline of the burrowing owl populations. Assimilation of poisons applied to ground squirrel colonies has taken a toll. Their habit of nesting in roadside banks also makes them particularly vulnerable to roadside shooting, being hit by cars, road maintenance operations, and general harassment. Within the grazing allotments evaluated in this EA, road maintenance operations would be the main threat to the burrowing owl. Burrowing owls require a productive vegetative community around their nest because they do not forage great distances. They do, however, prefer shorter vegetation around their nest site so they can easily see their prey.

Dune-obligate insect species (*Cardiophorus* sp.) : There is a small sand dune located at approximately at R36E, T7S, NW1/4 Sec.32, about 1 mile N of Deep Springs Lake. Several dune-obligate insect species occur on the dune. Species in the genus *Cardiophorus* are known from here. Deep Springs is unique in having 2 species living together. One species is fully winged; the other is flightless, has half-length vestigial wings, and occurs only on the best-quality sand within a small area . There are no intermediate forms. They are active for only a short time in winter (mid-

February is the best time to find them), often at below-freezing temperatures. Along with depth of sand, particle size is a major factor for species that are specialized to live only on dunes. When silt becomes infused into the sand, both the dune flora and fauna disappear, replaced by off-dune species.

Threatened or Endangered Species: The Black toad, *Bufo exsul*, is listed as threatened by the California Department of Fish and Game (CDFG) and is a "fully protected" species. It is found in the wild only in Deep Springs Valley in California, and is found in close proximity to water along water courses associated with wet meadow habitat. The black toad can also be found on dry sandy soil around the springs. According to the CA Dept of Fish and Game, the black toad occurs at Corral Springs, Bog Mound Springs, Buckhorn Springs, Deep Springs Lake, Antelope Springs, and was recently sited at Birch Creek. On BLM lands, the toad is present at Buckhorn Spring, potentially North Bog Mound spring and at the Antelope Spring Road crossing. All other black toad habitat is on private land or on National Forest. Population size at Corral Springs was estimated to be around 8,000 toads in 2003 (Murphy et al 2003). Population sizes at other springs are unknown. The black toad is active diurnally from March through November, with crepuscular and nocturnal activity during the warmest periods (CA DFG website). During cooler periods (late fall to early spring), it hibernates in rodent burrows and in depressions under debris. During the active season, adults seek cover under and between clumps of vegetation and under objects near water. Individuals escape capture by hopping into the water and seeking shelter under overhanging banks. The black toad forages among grassy tussocks surrounding the springs. Its diet consists of a variety of arthropods, annelids, and mollusks, with a preference for beetles, fly larvae, lepidopterous larvae, and ants (Busack and Bury 1975). The aquatic larvae feed primarily on algae and plant material. This toad breeds in shallow water with vegetation that protects eggs and tadpoles. Clutches of 120 to 150 eggs are common. Eggs hatch in 5 days and tadpoles transform in 3 to 5 weeks. Sexual maturity is reached by the end of the second year. The black toad initiates breeding in mid- March, and will often double clutch, resulting in tadpole presence through July. The most sensitive time is in the spring when the eggs are present.

b. Environmental Consequences

1. Impacts of Proposed Action

Impacts of the proposed action are not expected to have detrimental effects on wildlife.

Mule deer (*Odocoileus hemionus*): The following information was provided by the California Department of Fish and Game regarding potential impacts of cattle grazing on deer. Competition between deer and cattle could deplete preferred deer forage and reduce nutritional levels of their diet. Studies have shown that poorly nourished deer have very low fawn survival, compared to those on high quality diets. Deer use of early spring forage in riparian areas should be taken into consideration when developing a grazing strategy. Since deer use this area primarily in the winter, the presence of sufficient winter forage is of greatest concern. No specific studies have been conducted to determine to what extent cattle grazing affects the Inyo-White Mtn. deer herd, but the CA Dept of Fish and Game has observed that cattle grazing in riparian areas negatively impacts the deer herd.

In the Deep Springs Allotment, many of the springs are on private land. The riparian that is present on the BLM lands consists of about a mile of riparian on Wyman Creek, an unnamed spring in Wyman Canyon, Buckhorn Spring, Cuna Spring, North Bog Mound Spring, riparian below Antelope

Spring, and a spring area near Birch Canyon. All of these riparian areas are in good condition. Cattle grazing appears to be having little to no effect on the deer population. In addition, the Deep Springs Allotment is divided into 5 pastures, and the rancher rotates his cattle through the pastures, allowing about 9 months of rest between uses. This management has prevented over-grazing within the Deep Springs Allotment, maintaining healthy habitat for wildlife.

In the South Oasis Allotment, mule deer habitat is in the western half of the allotment in the more rugged area west of Eureka Valley Rd. This area receives only slight or no use by cattle (SW of Eureka Valley Road). The area that receives the most cattle use is northeast of Eureka Valley Road, on the flats and is not suitable deer habitat. Cattle receive water from wells rather than springs or riparian areas, avoiding degradation of riparian affecting wildlife. In some years, One Tubb Spring has received light use by cattle. This spring is important to wildlife and should be monitored periodically to insure maintenance of healthy riparian vegetation. Wildlife use other small springs in the Piper Mountains. These springs are located in rugged country and are not easily accessed by cattle.

In the Last Chance Allotment, deer use the Piper and Sylvania Wilderness Areas in the winter. This use does not conflict with cattle use since the area does not have any good water sources for cattle. Past cattle use has deteriorated the riparian habitat at Willow Springs in Cucomongo Canyon. However, the habitat is recovering. If cattle are expected to be using Willow Springs, the area should be fenced and water piped to a trough outside of the riparian. Kincaid Spring in the Sylvania Mountains is a seep with little riparian vegetation. Cattle and deer use this spring. It is important to monitor Kincaid Spring for potential cattle damage.

Eureka Valley has no water sources to attract cattle. Cattle only use this allotment when lush spring ephemeral forage is present. Since the allotment has been grazed only twice in the last 13 years, the impact to wildlife is not expected to be significant.

Desert Bighorn Sheep (*Ovis canadensis nelsoni*): in the Deep Springs Allotment: The bighorn sheep population does not appear to be adversely affected by cattle grazing. The bighorn sheep use the rugged mountains and cliffs, while the cattle use the lower flatter areas. As long as water sources are not degraded, cattle grazing in these allotments is compatible with the recovery of desert bighorn sheep in the area.

Pygmy Rabbit (*Brachylagus idahoensis*): The current population status of Pygmy Rabbits in California is unknown, but their numbers have probably declined in the past several years. Loss of habitat by overgrazing is the main reason for its decline. Even though overgrazing favors growth of woody shrubs such as sagebrush over perennial grasses, cattle often congregate in tall stands of sagebrush, seeking shade in summer, protection from wind, and relief from insects. Frequently, cattle trample and open up the understory from ground level up to 1 to 1.5 m, reducing food and shelter for Pygmy Rabbits. In these particular allotments, the sagebrush communities are not heavily used by cattle. The cattle are using the lower areas where water is available. The sagebrush communities are in the higher elevations. Therefore, cattle grazing is not expected to have a negative impact to the habitat of the pygmy rabbit.

Black toad (*Bufo exsul*): in the Deep Springs Allotment: The proposed action is not expected to adversely affect the black toad. The black toad population is most dense near Deep Springs Lake which is grazed by cattle. The Black toad has survived in this area in conjunction with cattle grazing for over 100 years. Historically, pronghorn antelope and desert bighorn sheep grazed in the area.

Healthy black toad populations appear to be compatible with grazing. On BLM lands, the toad is present at Buckhorn Spring, potentially at North Bog Mound Spring, and at the Antelope Spring Road crossing. All other black toad habitat is on private land or National forest. In 1980, researchers noted black toad tadpole mortality associated with water diversions and also noted some adult mortality presumably caused by cattle trampling. Cattle exclosures have been built around some of the spring sources to protect toad habitat. Cattle grazing in winter when toads are hibernating could crush the burrows in which they are hibernating. On the other hand, grazers such as bighorn sheep and pronghorn antelope were historically in the area. It is unknown how the thickly vegetated areas within exclosures affect the toad since they prefer habitats with short plant cover and unobstructed access to still or slow flowing water. To protect toad habitat, it is important to retain spring flow at the spring and to allow standing water to remain at the site. Deep Springs College has abandoned maintenance of irrigation ditches. To protect eggs and tadpoles, as well as active adults, cattle should be excluded from springs and areas that the black toad uses from mid-March through September. There is concern about a road crossing through the Antelope Spring outlet where black toads breed. When eggs and tadpoles are present, vehicles that cross through the water here cause mortality to these immature stages of the black toad. However, the road appears to be used almost exclusively in the fall during hunting season after the tadpoles have metamorphosed.

Migratory and breeding birds: The proposed action is not expected to adversely affect bird populations. Riparian areas are in good condition. Willow Spring in the Last Chance Allotment should be fenced to prevent habitat degradation if cattle will be in the area.

Burrowing Owl (*Athene cunicularia*) : Cattle and burrowing owls seem to coexist without much adverse impact. Cattle maintain shorter vegetation around their nest site which is beneficial to the owl. Cattle can trample burrows when cattle are densely congregated.

Dune-obligate insect (*Cardiophorus*): As previously stated, particle size is a major factor for species that are specialized to live only on dunes. When silt becomes infused into the sand, the dune flora disappear, replaced by off-dune species. At undisturbed high quality dune habitat, silt was wind-deposited into hard-packed hummocks held in place by shrubs, with almost pure sand occurring in flat areas between the hummocks. If cattle trample the dune, they destroy the dune's stability, and they mix silt in with the coarser sand particles. In 2001, it was reported that the hummocks were being broken up by trampling from cattle faster than the dunes could be renewed by wind-blown sand (Giuliani 2002). Due to this trampling, the silt to sand ratio in the middle of a sand flat was almost as high as the same ratio taken from a dirt hummock. In 2001, *Cardiophorus* at this dune were very few in number (normally they can be as thick as ants). There was concern because the most common dune beetle of all (*Eusattus muricatus*), found easily during collections for DNA analysis at all other Great Basin dunes last year (except for a few destroyed by dune buggies), could not be found anywhere at Deep Springs despite repeated attempts. This dune should be monitored for the impacts of cattle, and if necessary, cattle should be excluded from the dune to prevent trampling and degradation of dune habitat.

2. No Grazing

No adverse impacts if grazing were eliminated

3. Cumulative Impacts

Cumulative adverse impacts from past grazing are visible at Willow Spring in the Last Chance Allotment. However, cattle have not grazed there for several years, and the spring is recovering. If the spring is fenced, there will be no cumulative adverse impacts from grazing.

No adverse cumulative impacts were identified in the other allotments.

c. Consultation

Consulted the California Department of Fish and Game (Dawne Becker and Alisa Ellsworth in Bishop, CA) concerning the black toad, mule deer, and bighorn sheep . Their comments are incorporated in this document.

d. References

References listed at the end of the document

U. VEGETATION

a. Affected Environment

General:

The Deep Springs, South Oasis, Eureka Valley and Last Chance Allotment are located in the Great Basin Floristic Province as described in the *Jepson Manual, Higher Plants of California*. Most of the allotment supports what Sawyer and Keeler-Wolf in *A Manual of California Vegetation* describe as vegetation series (now called alliances) dominated by shrubs. These shrub series typically support an herbaceous layer that may include less than a dozen species of perennial grasses and forbs. In addition the herbaceous layer usually includes an extremely diverse number of annual forbs and up to five species of annual grasses. The riparian vegetation series are the most complex in that they can have multiple tree layers in addition to the shrub layer and the herbaceous layer. In addition the riparian zones with free water have an additional layer below the water surface

The Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments consist of a mixture of valley bottoms separated by mountain ridges. Many of the valley bottoms are over 4,000 feet elevation. Seven health assessments have been conducted on upland sites where vegetation attributes were sampled in the Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments. Thirty-six species of perennial plants were encountered at the upland transect sites. Several of the vegetation series identified in the allotment are considered transitional. These series include or are dominated by short lived species. According to Sawyer and Keeler-Wolf, these series can be an indicator of past and/or current disturbances. The disturbances can be either man caused (like grazing, or maintenance on rights-of-ways and roads) or natural (like fire or flood events). Examples of all of these disturbances were observed in the Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments. An example of the short lived species characteristic of these series is a site in Deep Springs Valley where periodic flooding and standing water result in stands of Russian thistle. The creosote bush (*Larrea tridentata*) and Joshua trees (*Yucca brevifolia*) are among the long lived species occurring in the area.

The creosote bush is close to the northern extent of its range in these allotments. The creosote bush series is a common vegetation series from the Mojave Desert Floristic Province that occurs in most of the allotments. The creosote bush is common in the Eureka Valley allotment and less common in the Last Chance Allotment and South Oasis Allotment. A single creosote bush occurs in Deep Springs Valley. Common perennial species found in the Creosote Bush Series include creosote bush, burro-bush or bursage (*Ambrosia dumosa*), winterfat (*Ceratoides lanata*), spiny hop-sage (*Grayia spinosa*), desert needlegrass, indian ricegrass (*Achnatherum (Oryzopsis) hymenoides*) and varied bluegrass (*Poa secunda*). The Joshua tree series is found in all of the allotments. This series is similar to the creosote Series with the inclusion of emergent Joshua trees. This series typically occurs at the upper edge of the creosote bush series where there is more moisture. Creosote bush does not always occur in the Joshua tree series in these allotments. The Joshua tree woodland was found to be the most productive vegetation series in the CDCA Plan forage inventories. Great basin species such as big sage (*Artemisia tridentata*), spiny menodora (*Menodora spinescens*), winter fat (*Krascheninnikovia lanata*), spiny hop sage (*Grayia spinosa*), shadscale (*Atriplex confertifolia*) and bud sage (*Artemisia spinescens*) are common species in the Deep Springs, South Oasis and Last Chance Allotments.

The main vegetation component in the Eureka Valley Allotment is a creosote bush shrub series. However, there is little perennial forage production. Ephemeral vegetation makes up nearly all of the available forage in the allotment. As a result, the Eureka Valley Allotment is classified as an ephemeral allotment in the CDCA Plan. The annual (ephemeral) vegetation is extremely variable in biomass production, ground cover and species composition year to year and site to site. Ephemeral biomass production is zero in most years, but in a good year, biomass productions will range between 500 and 1000 pounds per acre. Species composition is tied to germinating conditions. The annual grasses (mostly introduced) will germinate under much cooler conditions than the broad-leaved forbs. Many of the forbs are showy wildflowers. Several hundred species of annual plants occur in the area. Of these, only a few dozen species are of sufficient numbers and production to be important to livestock. There is some indication that perennial cover has diminished in the Eureka Valley Allotment possibly due to draught conditions.

Most plants in the allotments are growing-renewable resources which can tolerate some level of use on a sustained basis. Annual (ephemeral) plant species are the most tolerant of grazing. They will continue to thrive as long as they have been allowed to set seed and the site has not been unduly modified. Many of the annuals can be completely consumed once the seed has dropped. The perennial plants have different needs that make them more susceptible to grazing. Much of the perennial plant's production is directed at maintenance of energy reserves which are necessary to sustain future years' initial growth and flowering. Of secondary importance is the production of seeds. This means that perennial plants need to maintain an adequate level of photosynthetic processes through the year until they go dormant. Grazing removes photosynthetic material and stored energy from plants. The amount of material that can be removed from a plant depends upon the species, the time of year, overall health of the plant and growing conditions (soil moisture and nutrients). This amount of a perennial plant that can be safely removed on a sustained basis is referred to as the proper use factor (PUF). It is expressed as a percent of the current year's growth that can be removed on a sustained basis. Each species has its own PUF. These can run from 50% for some grass species to 10% or less for some shrub species. These PUFs were developed for more average years and should be considered excessive in draught years. The CDCA Plan contains PUFs and guidance that exceedances of the PUFs would lead to moving or removing of livestock.

b. Environmental Consequences

1. Proposed Action:

Direct and Indirect Impacts:

Livestock use impacts vegetation directly through removal by grazing and/or browsing and by trampling. A number of factors affect the impact of cattle on vegetation. These factors include (1) vegetation characteristics such as palatability of the plants, which varies seasonally, the response of the plant to grazing (increaser, decreaser or invader), phenology, the physical characteristics of the plant, distribution of the plants and abundance of desirable plants, (2) factors which affect accessibility such as slopes, distance from water and terrain, (3) grazing animal characteristics such as aggressiveness in working steep terrain, nutritional needs and preference for certain species, and (4) management factors such as choice of livestock type, management structures, moving animals, season of use, stocking rates and the use of salt and other supplements. Indirect impacts to vegetation occurs through the modification of the rangeland both biologically and physically which may change dominance, eliminate some species, change germination conditions, remove sheltering, reduce seedling survival and allow invasive weeds to encroach into the area.

Each of these allotments has proposed grazing using different grazing strategies resulting in different impacts. The Last Chance Allotment has received little grazing use over the last eight years. The proposed action is to allow 136 cattle to graze year around. This proposed stocking rate is expected to result in very light use on a general basis. However, year around use without moving cattle around many times results in poor distribution of cattle in the allotment. Under this proposal, it could be expected that cattle would tend to concentrate near water. Rangeland Health assessments noted this problem at Willow Spring where the site did not meet health standards as a result of cattle use. In addition to the impacts on the watering site from concentrated use, the area surrounding the water site would receive repeated extensive use. This repeated year around use over time would result in damages to the more palatable forage species in the area. Cattle typically seek out the most palatable species closest to water when left on their own. Repeated use on the same plant season long every growing season will reduce its vigor and eventually eliminate it. The end result is what is referred to as the bull's-eye effect where the area surrounding water has all palatable forage species eliminated or greatly reduced in vigor and/or numbers. Continued unmanaged year around grazing would likely result in heavily impacted concentration areas around water and surrounding bull's-eyes where the forage species have been removed.

Grazing occurs in the Eureka Valley Allotment as a result of drift from the unfenced South Oasis Allotment during good ephemeral years. There is no water in the allotment and the cattle rely on the moisture they derive from the vegetation and water sites 3 miles away in the South Oasis Allotment. This results in very light grazing use over most of the Eureka Valley Allotment. In addition, the majority of the use would occur only during the spring time in years when ephemeral feed existed. It is unknown how light grazing would impact perennial forage species in the Eureka Valley Allotment when it occurs every spring there is ephemeral forage. Some light grazing could occur on the Eureka Valley Allotment at any time there were cattle on the adjacent South Oasis Allotment.

The health assessments and determination for the South Oasis Allotment and monitoring studied on both the South Oasis and Deep Springs Allotments indicate that the current grazing is resulting in favorable conditions. The rotational grazing system being practiced on the Deep Springs is resulting in some increases in the perennial grass component at some sites. Even though the South Oasis

Allotment currently meets health standards, changing the season of use to avoid the critical spring growing season would likely result in increases in the perennial grass cover. The South Oasis AMP recommended some cross fencing, additional water developments and rotating the grazing use. Some or all of these actions could help alleviate problems with heavy use noted around several water sites. The Deep Springs and South Oasis Allotments would continue to meet health standards as a result of the proposed action.

Irreversible and Irretrievable commitment of Resources:

The vegetation removed by grazing is renewable on a sustained basis at moderate grazing levels.

Residual:

There would be continued utilization of renewable vegetation resources.

Cumulative Impacts:

There would be continued utilization of renewable vegetation resources by cattle and other grazers.

Recommended Mitigation:

- Establish a rotation grazing system, seasonal closures or other management practice to allow for periodic rest for the vegetation during the critical growing season on the Last Chance, South Oasis and Eureka Valley Allotments.
- Use fencing or other management practice to exclude cattle from Willow Spring to allow the site to achieve and maintain health standards.
- Evaluate impact to perennial species in the Eureka Valley Allotment and adjust management to allow for rest during some years when ephemeral grazing could occur.

2. No Grazing:

Direct and Indirect Impacts:

No annual or perennial vegetation would be trampled or removed by cattle. There would not be any expected large scale changes in vegetation composition on an overall basis. Cover and vigor of key forage species could increase. Standing Biomass levels could increase. Additional biomass could increase the incidence and/or intensity of fire. Changes would occur at high use sites.

Irreversible and Irretrievable commitment of Resources:

With no grazing there would be no use of vegetation.

Residual:

The same as Direct and Indirect Impacts

Cumulative Impacts:

Grazing would cease to contribute to impacts to vegetation in the Deep Springs, South Oasis, Eureka Valley and Last Chance Allotments. There would continue to be human and natural impacts to vegetation at site specific locations.

Recommended Mitigation:

Develop and implement rehabilitation and protection for the developed sites to aid recovery.

c. References

Listed at the end of the document

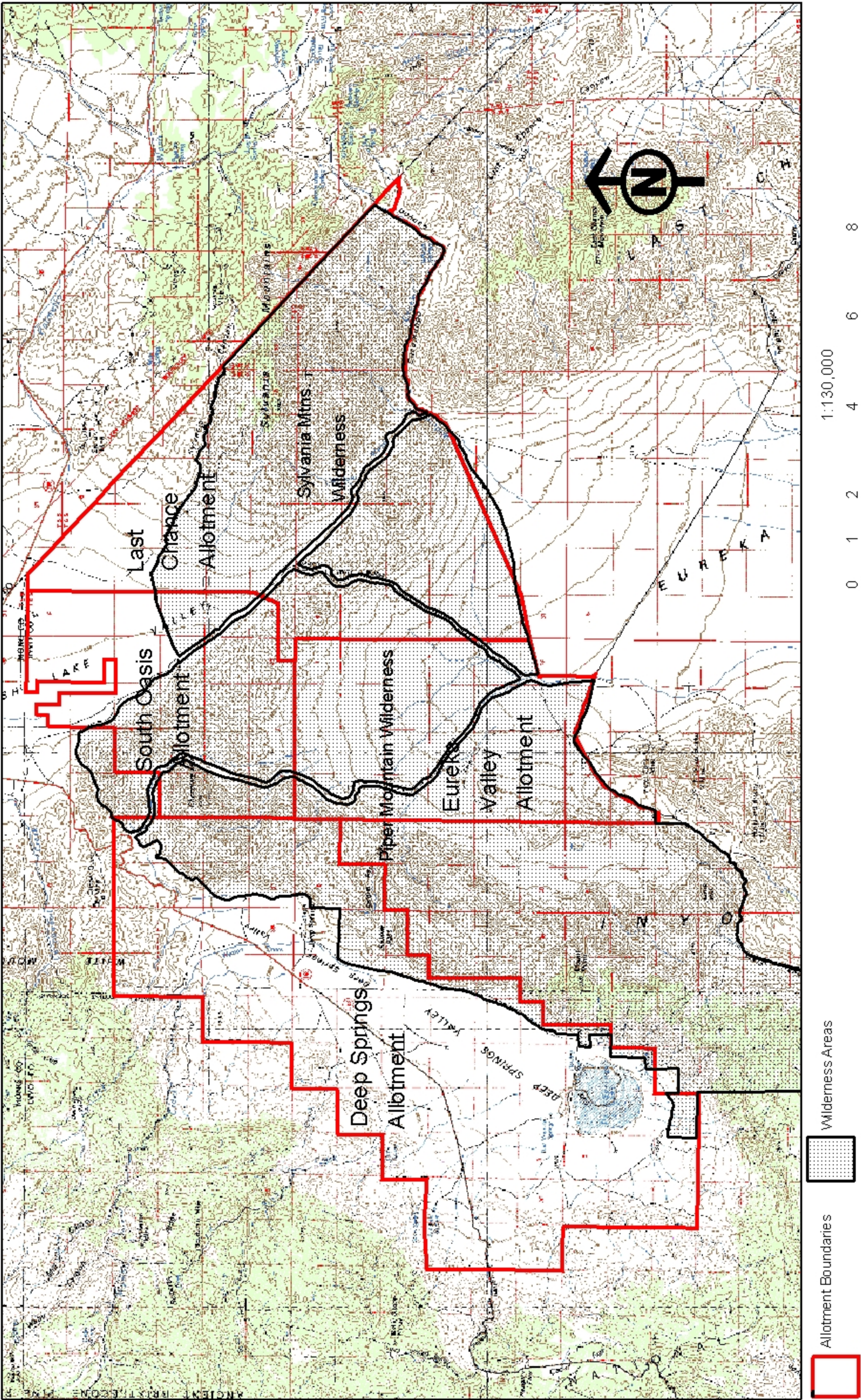
Participating staff:

Lead Writer: <u>Sam T. Fitton</u>	<u>Botanist</u>
Name	Title

<u>Participating Staff</u>	<u>Resource Specialty</u>
Donald Storm	Archeologist
Glen Harris	Soil, Air, and Water, & Vegetation
Shelley Ellis	Wildlife Biologist
David Sjaastad	Rangeland Management Specialist
Peter Graves	Environmental Coordinator
Alex Niebergs	Wild Horse & Burro Specialist
Martha Dickes	Wilderness Specialist
Craig Beck	Recreation Specialist
David Sjaastad	Resources Branch Chief

APPENDIX 1
ALLOTMENT MAP

Deep Springs, South Oasis, Eureka Valley, and Last Chance Allotments



APPENDIX 2
PROPER USE FACTORS
FOR FORAGE SPECIES

APPENDIX 2: PROPER USE FACTORS FOR FORAGE SPECIES

IN THE RIDGECREST FIELD OFFICE AREA

Proper Use Factors (P.U.F.'s) are related as a percentage of plant that is allowed to be grazed. Usually an average is taken from sampling a local population at a site.

Plant- Scientific Name	Common Name	P.U.F.
TREES & SHRUBS		
<i>Acamptopappus sphaerocephalus</i>	Goldenhead	10
<i>Ambrosia dumosa</i>	Burrobush	10
<i>Artemesia spinescens</i>	Budsage	20
<i>Artemesia tridentata</i>	Great Basin Sage	<5
<i>Atriplex canescens</i>	Four-wing Saltbush	40
<i>Atriplex confertifolia</i>	Shadscale	10
<i>Atriplex hymenelytra</i>	Desert Holly	<5
<i>Atriplex polycarpa</i>	Cattle Spinach	20
<i>Chrysothamnus nauseosa</i>	Rubber Rabbit Brush	<5
<i>Chrysothamnus viscidiflorus</i>	Green Rabbit Brush	<5
<i>Coleogyne ramosissima</i>	Blackbrush	<5
<i>Encelia farinosa</i>	Brittlebrush	<5
<i>Ephedra nevadensis</i>	Nevada joint fir, Mormon Tea	30
<i>Ephedra viridis</i>	Mountain joint fir	20
<i>Ericameria cooperi</i>	Goldenbush	0
<i>Ericameria linearifolius</i>	Linear-leaved Goldenbush	<5
<i>Eriogonum fasciculatum</i>	California buckwheat	20
<i>Eriogonum wrightii</i>	Wright's buckwheat	40

<i>Grayia spinosa</i>	Spiny Hopsage	30
<i>Gutierrezia sarothrae</i>	Snakeweed	0
<i>Hymenoclea salsola</i>	Cheesebush	<5
<i>Isomeris arborea</i>	Bladder-pod	10
<i>Juniperus californica</i>	California Juniper	0
<i>Juniperus occidentalis</i>	Western Juniper	0
<i>Juniperus osteosperma</i>	Utah Juniper	0
<i>Krascheninnikovia lanata</i>	Winter Fat	40
<i>Larrea tridentate</i>	Creosote bush	0
<i>Lepidium fremontii</i>	Desert Alyssum	<5
<i>Lepidospartum squamatum</i>	Scale-broom	<5
<i>Lycium andersonii</i>	Anderson thornbush	10
<i>Lycium cooperi</i>	Peach thornbush	10
<i>Machaeranthera tortifolia</i>	Desert aster	20
<i>Menodora spinescens</i>	Spiny menodora	20
<i>Opuntia basilaris</i>	Beavertail cactus	0
<i>Psoralea fremontii</i>	Indigo brush	10
<i>Salazaria mexicana</i>	Paperbag bush	10
<i>Salix lavaegata</i>	Red Willow	10
<i>Salvia doriae</i>	Purple Sage	10
<i>Senna armata</i>	Desert cassia	<5
<i>Stephanomeria pauciflora</i>	Desert Straw	30
<i>Tetradymia spinosa</i> var. <i>longispina</i>	Cotton felt-thorn	0
<i>Yucca brevifolia</i>	Joshua tree	<5

FORBS

<i>Mirabilis bigelovii</i>	Wishbone bush	40
<i>Sphaeralcea ambigua</i>	Desert Mallow	40
GRASSES		
<i>Achnatherum hymenoides</i>	Indian Rice Grass	50
<i>Achnatherum speciosa</i>	Desert Needlegrass	50
<i>Distichilis spicata</i>	Saltgrass	30
<i>Erioneuron pulchellum</i>	Fluffgrass	20
<i>Hilaria jamesii</i>	Galleta grass	50
<i>Poa scabrella</i>	Pine bluegrass	50
<i>Sitanion hystrix</i>	Squirrel-tail	40
<i>Sporobolus airoides</i>	Alkali Sacaton	40

References:

1. Appendix XIII, Volume F of Final Environmental Impact Statement and Proposed Plan for the California Desert Conservation Area, Sept. 1980
2. Plant Checklist for BLM Ridgecrest, CA Field Office Area, 2006

APPENDIX 3
RANGE IMPROVEMENTS

Appendix 3: Range Improvements for Deep Springs, South Oasis, and Last Chance Allotments.
There are no range improvements in Eureka Valley. N.F. = No File

Deep Springs Allotment

RI#	Project	Location	Condition & Comments	Mitigation Description
5222	Deep Springs Well	T8S, R36E, s7, NWNE	Solar Submersible pump?	
5242	West Valley Well	T7S, R36E S9	Submersible pump (not solar)	
5370	Payson Pipeline & Troughs	T7S, R35E, s24,	Functioning	
5372	Deep Springs Pipeline	T7S, R36E, s11, SWSE	Abandoned	
5425	White Mtn. Troughs	T6S, R36E, s25, NESW	Abandoned	
5498	Deep Springs College Fence	T7S, R36E, s32, SWSW	Functioning	
5499	Deep Springs Lake Fence & Addition	T8S, R35E, s12, NWSE	Functioning	
5507	White Sage Exclosure	T7S, R36E, s10, SWSE	Functioning	
5508	Salt Brush Exclosure	T6S, R36E, s35, SWNE	Functioning	
5509	Water Brush Exclosure	T7S, R35E, s24, NWSE	Functioning	
5565	Deep Springs Highway Electric Fence	T7S, R35E S26&R36E S3	Functioning	
5569	So. Deep Springs Valley Fence & CG	T7S, R36E, s32, NESW	Functioning	
5638	Deep Springs CG	T7S, R36E, s3, SESE	Functioning	
5649	Deep Springs Lake Road	T7S, R36E, s1, NENW	Functioning	
5564	Deep Springs Electric Fence			
Proposed	Mid-Valley Electric Fence	T7S, R36E, S21, 22 & 23		Create another pasture for better distribution of Cattle-May use recoillable fence in wilderness

South Oasis Allotment

RI#	Name	Landline	Condition & Comments	Mitigation Description
5086	One Tub Spring	T6S, R37E, s21, NENE	Functioning	
5087	Two Tub Spring	T6S, R37E, s33, SENW	Functioning	
5223	Sugar Loaf Well	T7S, R37E, s24, NENW	Functioning	
5234	Fish Lake Valley Well, Pipeline & Storage	T6S, R38E, s1, NWNW w/ Oasis	Functioning Storage Functioning	
5365	Fish Lake Valley Well Pipeline Ext.	T6S, R38E, S5, NWNW	Needs Repair	
5420	SE Oasis Pipeline & Trough (proposed)			Improve Distribution of Cattle
5421	NE Oasis #1 Pipeline & Trough	T6S, R38E, S7, SESE	Not Functioning	
5422	NE Oasis #2 Pipeline & Trough	T6S, R38E, s18, NWNE	Not Functioning	
5423	Piper Mtn. Troughs	T6S, R37E s22	?	
5492	South Oasis Exclosures	T6S, R 37 & 38E, s1, 7, 19	?	
5496	Alexis Fence & Gates	T6S, R37 & 38E, s1 & 6	Functioning	
5497	Fish Lake Valley Fence	T6S, R38E, s30, NENE w/ Oasis & LC	Functioning	
N.F.				
5483	North Fish Lake Valley Fence			
5485	Central Fish Lake Valley Fence			
5486	Piper Mtn.			

	Drift Fence			
5614	So. Oasis Corral			
5677	North Fish Lake Valley CG			
5678	Central Fish Lake Valley CG			

Last Chance Allotment

RI#	Name	Landline	Condition & Comments	Mitigation Description
5065	Kincade Spring Development	T6S, R38E, s25, NENW	Needed new trough	
5074	Hidden Canyon Spring	T7S, R39E, s4, W1/2	?	
5366	Hidden Canyon Pipeline & Trough	T7S, R39E, s4, W1/2	?	
5392	Sylvania Pipeline (unbuilt?)	T6S, R38E, s8, SWSW	Functioning, Note says never built?	
5511	Cucomongo Drift Fence	#1-Horse Thief Cyn. #2-Horse Thief Cyn. #4-Eureka Val. Rd. & Willow Cyn. Jct.	Functioning	
5613	Stateline Corral	T6S, R38E, s5, NW	Functioning	
5641	Eureka Valley Rd. CG	T6S, R38E, s31, NENE	Functioning	
5650	Sylvania Canyon CG	T6S, R38E, s18, SESE	Functioning	
N.F.				
5058	Last Chance Canyon Spring			
5059	Lower Last Chance Spring			
5060	Upper Last Chance Spring			
5061	Sand Spring			
5062	Willow Spring			

5066	Little Sand Spring			
5379	Willow Spring Pipeline			
5546	Sylvania Canyon Drift Fence			
5610	Lida Holding Pen			
5642	Sylvania Cyn. Drift Fence & CG			
5838	Last Chance Spring Fence			

APPENDIX 4

LIVESTOCK GRAZING AMENDMENT

SUPPLEMENTAL PROCEDURES FOR LIVESTOCK GRAZING PERMIT/LEASE RENEWALS

A CULTURAL RESOURCES AMENDMENT
TO
THE STATE PROTOCOL AGREEMENT

BETWEEN

CALIFORNIA BUREAU OF LAND MANAGEMENT
AND
THE CALIFORNIA STATE HISTORIC PRESERVATION OFFICER

The purpose of this amendment is to address the National Historic Preservation Act (NHPA) Section 106 compliance procedures for processing approximately 400 grazing permit/lease (hereafter “permit”) renewals scheduled for 2004 through 2008. This amendment shall cover grazing permit renewals for livestock as defined in 43 CFR 4100.0-5 as “...domestic livestock – cattle, sheep, horses, burros, and goats.” The following procedures will allow for renewal of the permits while maintaining compliance with the NHPA. Alternative approaches to this amendment may be developed by individual Field Offices, but such approaches shall fall under the Section 106 regulations of the NHPA (36 CFR Part 800) and shall require individual Field Office consultation with the SHPO.

These supplemental procedures are an amendment to the State Protocol dated April 6, 1998, which is scheduled for termination on October 25, 2004. These supplemental procedures will remain in effect when that Protocol is terminated and will become an amendment to a successor Protocol document.

This amendment deviates from the Protocol in *Section VI. Thresholds for SHPO Review*, which states, “BLM shall complete the inventory, evaluation and assessment of effects and document all findings, including negative inventories and no effect determinations, in BLM files before proceeding with project implementation.” This amendment would allow for renewal of an existing grazing permit prior to completing all NHPA compliance needs as long as Protocol direction, the BLM 8100 Series Manual guidelines (Protocol Amendment F), and the following specific stipulations are followed:

I. Planning

Grazing permit renewals of any acreage size shall be scheduled for cultural resource compliance coverage over the next ten years. Such long term management includes scheduling for inventory, evaluation, treatment, and monitoring, as appropriate. Schedules for inventories of all renewals to be covered by this amendment shall be delineated by each participating Field Office and submitted to the SHPO and the State Office at the first annual reporting cycle for FY 2004.

This amendment shall only apply to the reissuance of grazing permit authorizations and existing range improvements. All new proposed undertakings for range improvements shall follow the

established procedures within the Protocol or 36 CFR 800, the implementing regulations for Section 106 of NHPA.

II. Inventory Methodology

To address the impacts of grazing on cultural resources, a Class II sampling or reconnaissance survey strategy shall be devised by the cultural resource specialist in consultation with range staff which focuses inventory efforts on areas where livestock are likely to concentrate within areas of high sensitivity for cultural resource site locations. Congregation areas where it has been shown that the greatest levels of impact are likely to occur are generally around springs, water courses, meadows, and range improvement areas such as troughs and salting areas.

All existing range improvements within areas of high sensitivity for the location of cultural resource sites shall be inventoried. However, due to the fact that cattle trailing occurs along fence lines and the area of impact is limited to a one meter wide swath and impacts to cultural resources are generally restricted to this corridor, existing linear improvements will not be inventoried except in areas of high sensitivity for the location of cultural resource sites.

Salting areas may change from season to season making locating these areas problematic. Salting locations will be assessed by the cultural resource specialist in consultation with range staff and the permittee. The permittee will be asked to provide a map designating salting areas and these locations will be inventoried if they occur in areas where the probability for the occurrence of cultural resources is high. All livestock loading and unloading areas and corral areas will also be inventoried within areas of high sensitivity for the location of cultural resources.

A Class I records search will also be conducted for each allotment to ascertain previously recorded site locations and areas of prior survey coverage which can be accepted as meeting current standards. Sites located within livestock congregation areas will be visited to evaluate grazing impacts.

All areas identified for inventory in the survey strategy shall be covered intensely. All unrecorded site locations will be recorded and a report of findings for each allotment will be completed. These investigations shall only address public lands administered by BLM. Private, state and county in-holdings will not be evaluated.

III. Tribal and Interested Party Consultation

Field Offices will be responsible for contacting and consulting with Tribes and interested parties as outlined in 36 CFR 800 and the 8120 manual guidelines. This will also meet BLM government-to-government responsibilities for consultation.

IV. Evaluation

Determinations of eligibility to the National Register of Historic Places shall only be undertaken on sites or properties where it can be reasonably ascertained or it is ambiguous that range activities will continue to impact sites and further consultation with SHPO could be required.

V. Effect

A. Range undertakings where historic properties are not affected may be implemented under the Protocol without prior consultation with SHPO. These undertakings shall be documented in the Protocol Annual Report.

B. Range undertakings where historic properties are identified within APEs, and where historic values are likely to be affected or diminished by project activities, require consultation with SHPO, and ACHP if necessary, on a case-by-case basis, pursuant to 36 CFR 800.5-6.

VI. Treatment

Standard Protective Measures can include but are not limited to:

A. Fencing or enclosure of livestock from the cultural resource sufficient to ensure long-term protection, according to the following specifications:

1. the area within the enclosure must be inventoried to locate and record all cultural resources; and
2. the enclosure (i.e.) fence must not divide a cultural resource so that a portion is outside of the fence; and
3. the cultural resource specialist will determine the appropriate buffer to be provided between the cultural resource and its enclosing fence.

B. Relocation of livestock management facilities / improvements at a distance from cultural resources sufficient to ensure their protection from concentrated grazing use.

C. Removal of natural attractants of livestock to a cultural resource when such removal, in the judgment of the cultural resource specialist, will create no disturbance to the cultural resource (e.g. removing vegetation that is providing shade).

D. Removal of the area(s) containing cultural resources from the allotment.

E. Livestock herding away from cultural resource sites.

F. Use salting and/or dust bags or dippers placement as a tool to move concentrations of cattle away from cultural sites.

G. Locating sheep bedding grounds away from known cultural resource sites.

H. Other protective measures established in consultation with and accepted by SHPO.

The Standard Protective Measures defined above may be used to halt or minimize on-going damage to cultural resources. If the standard protection measures can be effectively applied, then no evaluation or further consultation with SHPO on effects will be necessary. The adopted Standard Protective Measures shall be added to grazing permit "Terms and Conditions" as appropriate for each grazing permit issued or reissued as fully processed permits (completed

NEPA analysis, consultation, and decision). The “Terms and Conditions” for each permit may be modified by the addition, deletion, or revision of Standard Protective Measures as described in Section VII of these Supplemental Procedures.

VII. Monitoring

A. Field Offices shall adopt the following monitoring guidelines:

1. monitoring shall be conducted yearly and documented to ensure that prescribed treatment measures are effective; and
2. when damaging effects to cultural resources from grazing activities are ambiguous or indeterminate, Field Offices shall conduct monitoring, as necessary, to determine if degrading effects are resulting from grazing activities and if they are continuing to affect the characteristics that may make properties eligible to the NRHP or if they are otherwise adversely affecting the values of cultural resources.

B. When monitoring has yielded sufficient data to make effect determinations, the following apply:

1. When no additional degrading damage will likely occur because standard treatment measures are adequate to prevent further damage from rangeland management activities, SHPO consultation on a case-by-case basis is unnecessary.
2. When no additional degrading damage will likely occur, even without implementation of standard treatment measures, then no further treatment consideration of those resources is necessary, even if past grazing impacts to the ground surface are evident.
3. When additional degrading damage will likely occur, mitigation of adverse effects shall be addressed on a case-by-case basis, pursuant to 36 CFR 800.5-6.

When monitoring results or case-by-case consultation result in a determination concerning addition or deletion of Special Treatment Measure(s) for a specific allotment, then that Measure(s) will be added to, or deleted from, the Terms and Conditions of the fully processed permit for that allotment.

VIII. Disagreements

When a Field Office Cultural Heritage staff and Field Office Manager fail to agree on inventory, evaluation, monitoring, and application of Special Treatment Measures, then the Field Office Manager shall initiate consultation with the SHPO.

IX. Reporting and Amending

A. Each participating Field Office shall report annually to the SHPO and the State Office, a summary of activities carried out under this amendment to the Protocol during the previous fiscal year. The reporting shall be included in the Protocol Annual Report.

B. Annual reports shall summarize activities carried out under this amendment. These reports are not meant to be compilations of the individual project reports prepared for the range projects; they are meant to be programmatic summaries of data and significant findings.

C. Annual reporting shall include at least three major sections:

1. schedules and status of accomplishments in meeting schedules for cultural resource activities in relation to the range management program as identified in Stipulation I; and
 2. results, as annual summaries of accomplishment and significant findings resulting from rangeland management cultural resource activities; and
2. appendices to the report that would include project, coverage and cultural resource location maps and tabular summaries of total number of cultural resources located, new cultural resources located, cultural resources evaluated, types of treatment measures employed at each location, and cultural resources monitored.

D. Annual reports may contain recommendations for new or revised treatment measures.

E. Either party to this agreement may initiate a process to negotiate new or revised treatment measures or to revise the schedule of inventories. When such a process is initiated, the parties to this agreement shall negotiate new or revised treatment measures or schedule of inventories and such revisions or additions shall be issued as Attachments to these Supplemental Procedures.

STATE DIRECTOR, BUREAU OF LAND MANAGEMENT, CALIFORNIA

/s/ james wesley abbott for

By Mike Pool

Date: 8/17/04

STATE HISTORIC PRESERVATION OFFICER, CALIFORNIA

/s/ milford wayne donaldson

By Milford Wayne Donaldson

Date: 8/18/2004

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